RICKER LIBRARY ARCHITECTURE
UNIVERSITY OF ILLINOIS

THE BUILDER

Incorporating ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, WC2

Telephones: Temple Bar 6251-2-3-4

Vol. clxxxviii April 15, 1955 No. 5852

ARTICLES PAGE

CORRESPONDENCE 620
COST OF BUILDING CHART: Variations from 1914 to Date ... 622
ROYAL GOLD MEDAL FOR ARCHITECTURE: Presentation to Mr. J. Murray Easton... ... 624
CITY OF LONDON ARCHITECT: New Post to be Created 632
OXFORD DEVELOPMENT PLAN: Minister Approves Proposals 633
TOWARDS INCREASED PRODUCTIVITY (2): The Phasing of Housing Site Operations ... 634
TOWN PLANNING DECISIONS 637
INTERNAL DECORATING : LMBA Technical Bulletin ... 637

PAGE

IN PARLIAMENT 640
AIR CONDITIONING IN HOT CLIMATES: By Raglan Squire 641
BOOK 644
NEW WAGES AGREEMENT: NJC's Statement 649
EASTERN COUNTIES JOINT CONSULTATIVE BOARD : Annual Report 649
OVERSEAS BUILDING 651
SCOTTISH BUILDER 652

ILLUSTRATIONS

HOUSE AT WITNEY, OXFORDSHIRE: By E. R. Chilton ... 621
HITCHIN HIGH SCHOOL FOR GIRLS: By C. H. Aslin 625

NEWS SUMMARY

NO DECISION has yet been made by the English Electric Company in regard to their proposal to build offices on the Gaiety site. p. 620

THE COST OF BUILDING, by June next, will be 4.217 per cent. above that of May, 1954, according to Charts prepared by Mr. Venning. p. 622

THE CITY CORPORATION is to appoint a City Architect who will be responsible for all architectural work undertaken by the Corporation, together with the control of the City Planning Office. p. 632

THE CITY OF OXFORD DEVELOPMENT PLAN has met with the general agreement of the Minister, but the Minister is anxious to know the Council's intentions for dealing with the problem of traffic congestion in the University area, which were not covered in the plan as submitted. p. 637

NEW WAGE INCREASES in the building industry come into operation on Monday next, April 18. Craftsmen earn an additional 2½d. per hour and labourers, 1½d. p. 649

IN VIEW OF THE BURDEN OF RETENTION MONEYS on builders, the Eastern Counties Joint Consultative Board of Architects, Quantity Surveyors and Builders has agreed to draw the attention of architects to the desirability of specifying less than 10 per cent. for retention purposes wherever this is considered possible. p. 649

THE END OF AN EPOCH

THE retirement of a Prime Minister is not ordinarily a subject for comment in the columns of a technical newspaper, but then Sir Winston Churchill was not an ordinary Prime Minister. It is not our intention nor our function to speak of his work for the Commonwealth and the world; that is a task for others. We can speak, however, of his abiding interest in the building industry, not only exemplified in his hobby of bricklaying but in his belief that whatever challenge he has thrown out to that industry has been accepted and fulfilled.

Two examples will suffice: the great defence works carried out in the war, culminating in the construction of the Mulberry harbours, and the reaching and surpassing of the target of 300,000 houses in 1953. Sir Winston knows his fellow countrymen as no one since the Duke of Wellington, perhaps, has done, and of all men who make up our British fabric the builder is probably the most typical; in setting the industry tasks which others might have held to be impossible, he has known that he was taking the surest way to their fulfilment.

Sir Winston's presence at the National Federation's annual dinner in January gave those representatives of the building industry present the opportunity to express their feelings of admiration and loyalty to a man whose service to mankind assures him of an unassailable place in the halls of memory.

AN ARCHITECT FOR THE CITY

CONSIDERATION of the desirability of re-arranging the several duties of the Surveyor, the Engineer and the Planning Officer of the City of London led the City Corporation last autumn to appoint a City Surveyor whose principal duty would be valuation and estate management. Now, as a result of taking expert opinion from Sir Lancelot Keay and Sir William Holford, the Corporation has decided to appoint a City Architect to be responsible for all architectural work to be undertaken on behalf of the Corporation, together with the control and direction of the City Planning Office, and an advertisement of the post appears elsewhere in this issue. When the appointment has been made, a review of the duties of the Surveyor's, Engineer's and Planning Offices will be undertaken.

The Corporation's proposal will be welcomed, for the Architect is to have, as prime responsibility in the immediate future, the control through planning powers of aesthetics and design of new buildings in the City, and liaison with Government departments, the London County Council and the Royal Fine Art Commission. His advent must mean less work for architects in private practice who, in the last six years have earned over £90,000 in fees, for

the Architect is expected to undertake a large part of this work, although some specialised works may demand the engagement of outside architects.

The appointment has come about, it seems, through the termination of the joint appointment of Mr. Holden and Sir William Holford as consultants consequent on Sir William undertaking the preparation of the scheme for St. Paul's Precinct (*The Builder*, April 1). The Improvements and Town Planning Committee will now look to the Architect for advice and assistance.

In effect, the major change envisaged will mean a shuffling of personnel and a re-allocation of duties rather than a change of policy. But the appointment of a really first-class architect possessing vision, ability and courage could mean, in conjunction with Sir William Holford's appointment, fresh hope for the architecture of the City of London.

RESEARCH: PROGRESS AND REGRESSION

THE publication of the annual report of the Department of Scientific and Industrial Research for the year 1953-54 (Stationery Office, price 9s.) provides a favourable opportunity to review the progress in building research and to consider the needs of the future. Most of the current research into building and constructional problems is carried out by the Government at public expense through the DSIR, the principal agency being of course the Building Research Station. A glance at the latest annual report shows that the amount of work on problems of interest to the building and civil engineering industries is substantial. Although much of the work is of a long-term nature, some features are of immediate practical importance—notably the full-scale trials which are being carried out by the BRS in co-operation with members of the National Federation of Building Trades Employers.

This scheme of co-operation was announced a little more than a year ago and is therefore still in its early stages, but the current DSIR report indicates that it has evoked a satisfactory response from the industry. Two items have been chosen in the first instance—these are the use of air-entrained sand-cement mixes for external renderings, and the use of zinc oxychloride paint as an additional means of preventing the spread of dry rot in timber. Working instructions have been provided for both these proposals and invitations to participate have been extended, through the National Federation's Research and Technical Information Committee, to the different areas of the country covered by the several regions of the NFBTE. An immediate response from some 40 firms expressing a desire to participate was coupled with a request that further items be submitted for their consideration. The DSIR add that each trial must of necessity await a suitable occasion and is also contingent on securing the approval of the client. There would seem, however, to be ample opportunities for testing the use of zinc oxychloride paint in connection with dry rot, and this is moreover a particularly valuable piece of work at a moment when local authorities are embarking upon the patching and repairing of the slums. It is to be hoped that the results of this work will be forthcoming as soon as possible.

The DSIR report gives no indication of what is happening with regard to the other items mentioned when the scheme was announced early in 1954. The NFBTE then mentioned a number of items which had been suggested as possible subjects for full-scale trials under this scheme: at least two of these items appeared to be of topical importance—namely, methods of renovating old houses, and various methods of reducing deterioration of domestic boiler flues. Perhaps some information on these matters will be forthcoming when the BRS report (which is naturally more detailed in its own field) appears.

The DSIR report deals with a number of other interesting matters apart from the work being done in collaboration with the NFBTE. For instance, there is an especially important account of the work on pre-stressed concrete. Because of the creep of steel and the creep and shrinkage of concrete, there is a loss of pre-stress in course of time. The BRS are measuring these losses and, although the measurements are not complete, the present indications are that slightly larger allowances than are usually made should be adopted in design. According to the report it would probably be wise to assume that the pre-stress will be reduced in time to about 80 per cent. of its initial value; although an underestimate of these losses of pre-stress does not lead to an appreciable reduction in the margin of security against collapse of the structure, it does give a greater risk of cracking in the concrete for normal working conditions.

This is obviously information of the greatest importance, but unfortunately there seems at present to be no adequate means of disseminating technical information of this type to the industry. For some years after the war the Ministry of Works did an excellent job of work in the publication of the Post-War Building Studies, the National Building Studies and the various advisory leaflets. The sales of these publications are believed to have been really substantial and that, regarded even as a commercial proposition, they more than paid their way. This service appears to have ceased, since hardly any literature of this type has been issued by the Ministry during the last two years or so. It is not clear whether this cessation of activity is a deliberate act of policy. If it is, it seems to us to be in many ways most unfortunate. The substantial sales of this literature indicates that it met a real demand—a demand which, we believe, continues to exist. If so, the service might well be worth running at a loss, but the earlier experience suggests fortunately that that need not happen. It is, after all, of little avail for the Government to spend large sums on research if the results of the research do not reach the individual members of the industry who can put them into practice.

The very substantial advisory service previously maintained by the Ministry of Works owed its origin largely to the need immediately after the war to reduce costs and to overcome the shortage of labour and materials. During the last two or three years there has been such a remarkable increase in building activity that some people may perhaps feel that there is no longer the same need for research and the supply of technical information. We believe that to be an utterly mistaken view. Building costs are still far too high, and notwithstanding the impressive increase in activity, the building needs of the country are still very far from being met—the tragedy of the slums, to take only one instance, is likely to be with us for many years yet. For these reasons we can only regard the closing down of the Ministry of Works' technical information services as retrogressive.

It is perhaps ironical that this step should be taken at a time when there are signs of a growing interest in research on the part of the industry. It is particularly encouraging that the co-operation between the BRS and the NFBTE should be going so well at a time when the increased supplies of materials might lead people to think that there was no longer a problem. We hope that the Government will seriously reconsider reviving the Ministry's technical information services, but if they will not, something on similar lines should be organised by the industry.

Notes of the Week

SCOTS' NIGHT AT RIBA

THE overall quality of the proceedings on April 5 when Mr. John Murray Easton became what Mr. Hope Bagenal described as "the sixth or seventh Scotsman to receive the Royal Gold medal," is of itself a tribute to the recipient of British architecture's greatest honour. Seldom at the RIBA has the standard of speaking been higher, allusion more apt or pleasure in the award more evident, and this was as it should be for Mr. Easton's gifts as an architect and his qualities as a man are on the same high plane.

It may be doubted whether any Gold Medalist has enjoyed a finer opening oration than Mr. Bagenal's speech—lucid, pithy and provoking of thought. Mr. Basil Spence, who followed, recalled how Easton's Royal Horticultural Hall had been the architectural landmark of his student days, much as the Royal Festival Hall had captured the imagination of the present-day student. They were followed by a string of clients and others who left their audience in no doubt that here was an architect who knows how to capture and retain the respect and co-operation of his clients, and of his partners!

What a pity that no builder had been invited to give an opinion on that vital part of any architect's work—his ability to manage the erection of his buildings. Easton, we can be sure, would here rank with his firm's former partner, the late Stanley Hall, of whom it was once said by a foreman bricklayer: "He's all right is Mr. Stanley; he ain't like those arshetecks what don't know what they wants until it's up, and then they knows they don't like it."

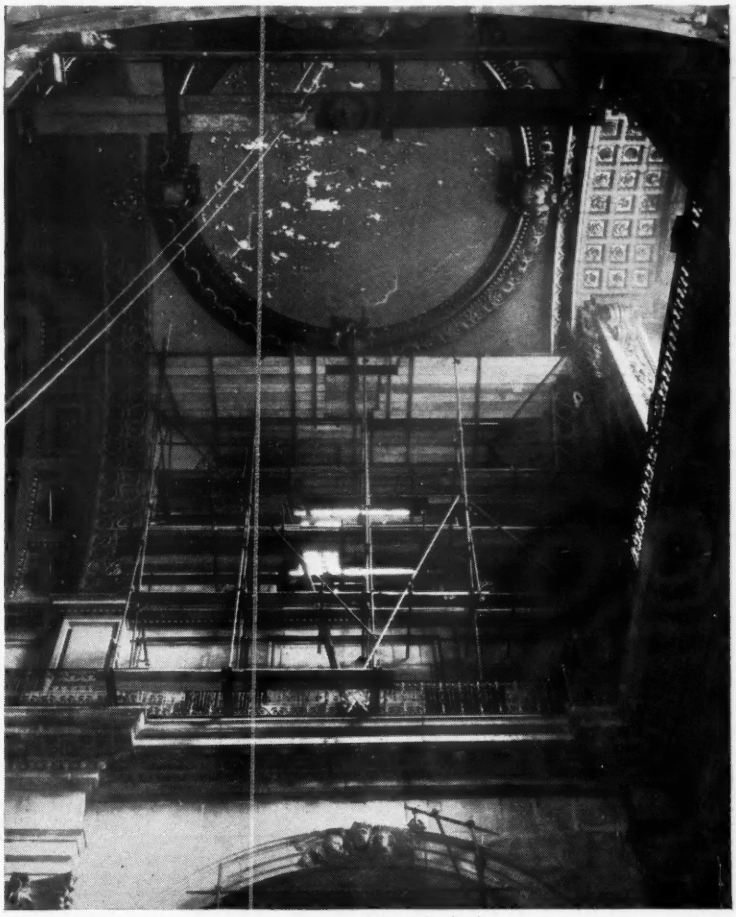
TUC SCULPTURE

THERE was general disappointment and surprise at the low standard of entries in the TUC sculpture competition when the results were made known in October last year. It will be remembered that the competition was for two groups of sculpture for the TUC Memorial Building and that the assessors decided to withhold the first, second and third prizes and to award only three consolation prizes in each of the two classes into which the competition was divided.

It was not generally known at the time that the Royal Society of British Sculptors had not been consulted about this competition, although this fact is recorded in the 1954 annual report of the Society which has recently been published. The report also states that several protests were made to the organisers of the competition.

In the first place, after the conditions of the competition had been issued, representations were made concerning the failure of the organisers to announce the names of all the assessors. After these were published the Society wrote and deplored the absence of a sculptor on the panel. And then, following the announcement of the results of the competition, the Society wrote again to the TUC expressing dissatisfaction at their failure to award the prizes as implied in the conditions.

Many will probably form the opinion that had the Society's co-operation been sought the competition might have been more of a success.



RESTORATION OF ST. PAUL'S CATHEDRAL.—Work is proceeding on the restoration of St. Paul's Cathedral, following the success of the campaign to raise £400,000 for this purpose, and the north transept and east end of the cathedral are now in the hands of the builders. The photograph shows scaffolds being erected to carry out repairs and redecoration of the ceilings of the south transept, which was damaged by blast during the war. The plans for restoring the Chapter House to Wren's original designs have been agreed and work is to begin soon. Donations are still required towards the second part of the campaign's object: the establishment of an income of £20,000 a year for maintenance of the fabric and services. The whole work of restoration is being carried out under the direction of the Surveyor to the Fabric, Mr. W. Godfrey Allen, FSA, FRIBA.

DESIGNER AND CLIENT

MR. JOHN FARLEIGH, CBE, lectured on "Design as a Professional Problem," to the Institute of British Decorators and Interior Designers at the RSA on March 21. Apart from his leadership of that invaluable "BSI" of qualitative standards, the Crafts Centre, John Farleigh's integrity as artist and teacher gave unusual weight and authority to what he said about the designer's relations with his client.

He made it clear that although it was admittedly an over-simplification to say that the client must be given what he wants, that was in fact the designer's ultimate responsibility and the measure of his success. This essential conditioning factor was among the limitations on which all design could, and does, thrive if it is worth its salt. The point cannot be made too often, particularly among laymen, who sometimes seem sceptical about the artist's willingness and ability to accept it.

Farleigh concentrated on the realistic and practical implications of this thesis rather than on the aesthetic ones or matters of comparative taste, and thus deliberately chose the hard way, open to misunderstandings as the ensuing discussion at one point seemed to indicate. Though he did not in fact suggest that "the customer is always right," he would, one felt, qualify his thesis with the reservation that the customer doesn't always know what he wants until he sees it. The designer's job is, of course, to add up, and resolve, a number of conflicting fac-

tors so as to give tangible and visible outcome to a solution which, however well formulated, must otherwise remain unrealised for the client.

There is a strong analogy with the doctor, who, significantly, was instanced by several who contributed to the discussion. The diagnostic lines along which the designer must work still leave plenty of room for the "inspired hunch," which the pure scientist increasingly values. If design ever approaches an exact science, one feels it will be by these means rather then any "good-taste formula" of universal application.

TROPICAL ARCHITECTURE

MR. C. Y. CARSTAIRS, CMG, writes from the Colonial Office: In the leading article in your issue of Friday, April 1, you paid me the compliment of quoting from an address which I gave at the Conference on Tropical Architecture held in March, 1953. I am afraid, however, that in the last sentence of your quotation there are one omission and two misprints, which affect the sense of what I was trying to say, which should read as follows (I have *italicised* the words in question):—

> "I suggest that for the underdeveloped peoples it is of enormous political and social importance that the all-powerful *first* impression of *the* new life should be as good as we can make it, and that we should *not* regard workers' housing as very interesting and important—when we can get around to it."

COMING EVENTS

MONDAY, APRIL 18

ECCLESIOLOGICAL SOCIETY.—"Essex Churches Around Hatfield Broadoak," by Mrs. A. R. Hatley, BSc. 2, Bloomsbury-square, WC1. 6.30 p.m.

COAL UTILISATION COUNCIL.—CUC Convention, Floral Hall, Winter Gardens, Eastbourne. 11.15 a.m. Continuing on April 19.

TUESDAY, APRIL 19

INSTITUTE OF BUILDERS.—Annual dinner. Fishmongers' Hall, London Bridge, EC. 7.15 p.m.

HOUSING CENTRE.—"A New Town Comes to Life," by Mr. L. E. White, of Harlow Development Corporation. 13, Suffolk-street, SW1. 6 p.m.

DESIGN AND INDUSTRIES ASSOCIATION.—"Everyday Life in America," by Mr. Max Black. Royal Society, Burlington House, Piccadilly, W1. 12.30 p.m.

WEDNESDAY, APRIL 20

RICS (QUANTITY SURVEYORS' COMMITTEE).—"The Building Industry in Denmark," by Aage Christensen, Erling Frederiksen and Bjorn Bindslev. 12, Great Street, SW1. 6 p.m.

LMBA (CENTRAL AREA NO. 1).—Luncheon and General meeting at which Mr. L. J. Holloway, LMBA president, will be present. Derry and Tom's Restaurant, Kensington High-street, W8. 1 p.m.

CHADWICK PUBLIC LECTURES.—"The Role of the Public Health Inspector," by Dr. Neil R. Beattie. Reardon Smith Lecture Theatre, National Museum of Wales, Park-place, Cardiff. 3.30 p.m.

ILLUMINATING ENGINEERING SOCIETY.—Annual dinner and dance. Café Royal, Regent-street, W1.

LONDON BUILDING AND ENGINEERING CONTRACTORS' ACCIDENT PREVENTION GROUP.—AGM. Safety, Health and Welfare Museum, Horseferry-road, SW1. 2.30 p.m.

THURSDAY, APRIL 21

RICS (JUNIOR ORGANISATION).—"Reducing Building Costs," by Mr. D. E. Woodbine Parish. Talbot Restaurant, London Wall, EC2. 7.40 p.m.

INSTITUTE OF BUILDERS (LICENTIATE DISCUSSION CLUB).—"The Stone Masonry Industry," by Mr. G. B. Knight, 48, Bedford-square, WC1. 6.30 p.m.

INSTITUTE OF HOUSING.—AGM. County Hall, Westminster Bridge, SE1. 6.45 p.m.

REGISTERED PLUMBERS ASSOCIATION.—Meeting to establish Tees-side district council of the Association. Corporation Hall, Stockton-on-Tees. 7.30 p.m.

SOCIETY OF CHEMICAL INDUSTRY.—AGM. 11. Upper Belgrave-street, SW1. 6 p.m.

FRIDAY, APRIL 22.

SHOREDITCH AND FINSBURY WOMEN'S INSTITUTE.—Exhibition of students' work. Sir Philip Magnus School, Penton-rise, WC1. 12 noon. Continuing also on April 23.

CORRESPONDENCE

"THE BUILDER" IN AFRICA

To the Editor of *The Builder*

SIR,—Having only returned the other day from a visit to East Africa, I had not until now seen the special *Builder* issue (March 11) of building in Africa.

May I offer you rather belated congratulations on the informative articles on housing and building in Eastern and Southern Africa which the issue contains; also on the very interesting impressions of a visit to Africa which you published earlier this year. From personal experience, I know that these impressions were much appreciated by those who read them in Africa.

There is no local periodical devoted to building in Africa north of the Rhodesias. Architects, builders and civil engineers, therefore, look for news of building, and for information on the materials and equipment available, in the British technical Press. In the past, little attention has been given to building in Commonwealth and British territories overseas. It is most encouraging to see your journal, and others, taking an increasing interest in building in Africa. I am sure that architects and builders overseas will look forward to further issues devoted, I hope, not only to East and South Africa, but to the West African territories, the Caribbean and the Far East.

Only by an increased exchange of ideas and experiences, such as your African issue provided, can building standards in the less technically developed areas of the world be improved. I particularly welcome the interest you have shown in housing in Africa; the improvement of living conditions, and particularly the provision of decent homes, is one of the major problems facing the African continent today.

G. A. ATKINSON
[BA (Arch), ARIBA].
Colonial Liaison Officer, Building Research Station, and Housing Adviser to the Colonial Office.
Garston, Watford.

"I was an architect until I heard of the new rates for building operatives."

TRAINING FOR MANAGEMENT

To the Editor of *The Builder*

SIR,—Following the report of Professor Mace's progressive lecture given to the members of the Institute of Builders and reported in your issue of March 18, Principal Reid's letter in your correspondence columns last week is most timely and should be read and most carefully noted by the leading members of the industry.

Management is not an exclusive function of any one individual or section of the industry; it is the total process by which needs and ideas are converted into productive action. It covers the widest field, from those who promote activity at top level through those who direct, co-ordinate, organise and control, to those who respond by actual manual effort. Architect, builder, manager, foreman—each one is a link in the chain of command; each severally and collectively needs to be trained in the exacting art and science of management. Alas! little, if any, detailed study or research has been directed by the industry to this urgent matter.

Is it too much or too soon to hope that the RIBA, possibly with the active support of the British Institute of Management, will give an enlightened lead to the whole industry in the development of basic management studies?

D. E. WOODBINE PARISH.
11, Buckingham Palace-gardens, SW1.

MODULAR CO-ORDINATION

To the Editor of *The Builder*

SIR,—Mr. W. A. Allen's description of the preparatory work of the Building Research Station on modular co-ordination, your issue of April 1, shows that there is a long way to go before a complete system of practical application is likely to be evolved, but it is clear that an encouraging start has been made. The tabular statement of combinations of "number sequences" must have given many, perhaps for the first time, a visual idea of the complexities of the problem and of the lines along which it is likely to be solved.

May I suggest that, as soon as the BRS investigations allow, it would be helpful to show the application of any promising system or systems to some definite building project. Descriptive accounts of research are of the greatest interest, but a set of geometrical drawings—plans, sections, elevations and details—showing the embodiment of modular structural elements, building components and fittings, would do much more to win the support and co-operation of architects, builders and manufacturers.

X.

GAIETY SITE COMPETITION

THE English Electric Company informs us that there is no foundation for a statement, made in London last week, that the future of the rebuilding scheme for the Gaiety site has been settled. The directors of the company have not yet formally considered the matter.

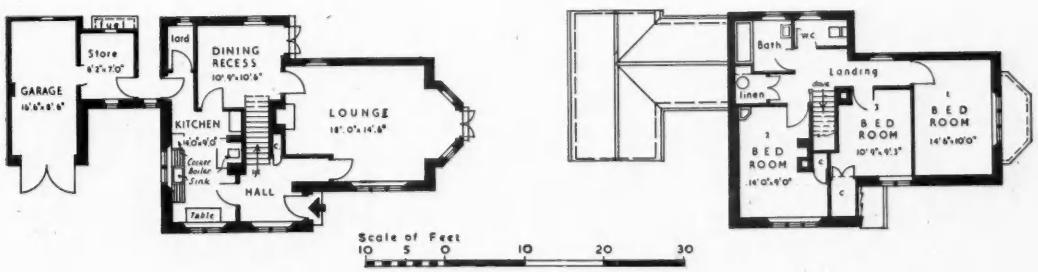
The entrance front.

HOUSE AT WITNEY, OXFORDSHIRE

Architect
EDWIN R. CHILTON, FRIBA, MTPI

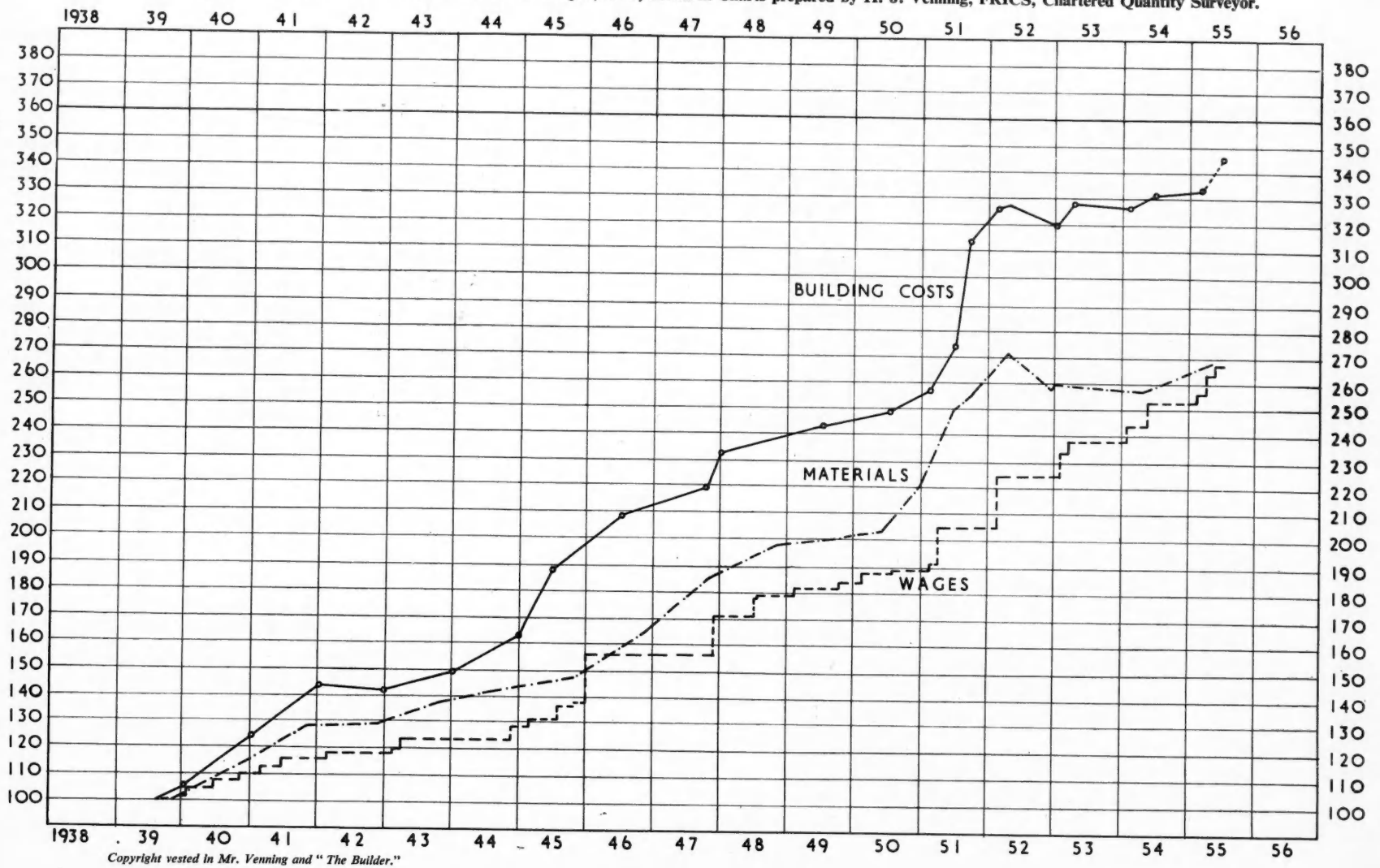
Builders
FISHER & TOWNSEND

MR. EDWIN CHILTON, the architect, built this house in 1950-51 for his own occupation. The materials used in its construction included rough chopped stone facings from Whitehill Quarry, Burford, Oxfordshire; dressed stone for quoins, cills, mullions and heads from Farmington, Northleach, Gloucestershire; roofing tiles from "Dri-roof," Leighton Buzzard; and metal windows supplied by Williams and Williams, Ltd.



Ground- and first-floor plans.

THE COST OF BUILDING.—Variations from 1939 to April, 1955, shown in Charts prepared by H. J. Venning, FRICS, Chartered Quantity Surveyor.



Copyright vested in Mr. Venning and "The Builder."

***BUILDING COSTS*, 1939-1955 (*Chart A*).—*Plotted above are the fluctuations in Wages, Materials and Building Costs over the years* 1939 (*Datum* 100) *to April,* 1955. *The Index stands at* 346 *as compared with* 332 *at May,* 1954. *On facing page will be found itemised the various wages and other increases since* 1939.

"THE BUILDER" COST OF BUILDING CHART

(Copyright: H. J. Venning, FRICS, and "The Builder")

WAGES

Wages of one craftsman and one labourer (London rates) separately and conjointly with an allowance for emoluments such as the guaranteed week, holidays with pay and allowances under the working rules.

Date	*Craftsman Labourer*	*Conjointly*	*Pence*	*Percentage Allowance*	*Actual Cost in Pence*	*Index Figure*
June, 1939	1/9 + 1/3½	3/0½	36.75	+ 5	38.59	100
December, 1939	1/9½ + 1/4¼	3/1½	37.75	,,	39.64	102.7
January, 1940	1/10 + 1/4¼	3/2¼	38.75	,,	40.69	105.4
June, 1940	1/10½ + 1/5¼	3/3¼	39.75	,,	41.75	108.2
September, 1940	1/11 + 1/5½	3/4½	40.75	,,	42.78	110.8
February, 1941	1/11½ + 1/6¼	3/5½	41.75	,,	43.84	113.6
June, 1941	2/0 + 1/6½	3/6½	42.75	,,	44.89	116.3
February, 1942	2/0½ + 1/7¼	3/7¾	43.75	,,	45.94	119.05
February, 1943	Holiday Stamp	3/7¾	43.75	+ 5¼	46.04	119.3
April, 1943	2/1¼ + 1/8	3/9¼	45.5	,,	47.89	124.1
November, 1944	2/2½ + 1/8¾	3/11¼	47.25	,,	49.73	128.8
February, 1945	2/2½ + 1/9½	3/11¾	47.75	,,	50.25	130.2
July, 1945	2/3½ + 1/10	4/1¼	49.5	,,	52.09	135.0
October, 1945	Guaranteed Week	4/1¼	49.5	+ 6½	52.72	136.6
January 1, 1946	2/7½ + 2/1¼	4/8¾	56.75	,,	60.44	156.6
September 30, 1946	Increase H.I.	4/8¾	56.75	6¾	60.58	157.0
February, 1947	Travelling	4/8¾	56.75	7	60.72	157.3
September, 1947	Holiday Stamp	4/8¾	56.75	7¼	60.86	157.7
November 16, 1947	2/10½ + 2/3¾	5/2¼	62.25	+ 7	66.61	172.6
July 5, 1948	Health Scheme	5/2¼	62.25	+10	68.48	177.4
July 11, 1948	2/11 + 2/4	5/3	63.0	,,	69.30	179.5
February 7, 1949	2/11½ + 2/4½	5/4	64.0	,,	70.4	182.4
October 3, 1949	2/11½ + 2/5	5/4½	64.5	,,	70.95	183.9
February 6, 1950	3/0 + 2/6	5/6	66.0	,,	72.6	188.1
July 3, 1950	3/0 + 2/6½	5/6½	66.5	,,	73.15	189.5
February 5, 1951	3/0½ + 2/7	5/7½	67.5	,,	74.25	192.4
March, 1951	3/3 + 2/9½	6/0½	72.5	,,	79.75	206.6
March 26, 1951	Holiday 3d.	6/0½	72.5	,,	79.75	206.6
April 2, 1951	Holiday 3d.	6/0½	72.5	,,	79.75	206.6
October 1, 1951	Increase Ins.	6/0½	72.5	,,	79.75	206.6
February 4, 1952	3/6 + 3/0½	6/6½	78.5	+10½	86.74	224.8
April 7 & 11, 1952	Holiday Stamp	—	78.5	10¾	86.9	225.3
October 6, 1952	Increase Insurance	—	78.5	11	87.13	225.8
February 2, 1953	3/8 + 3/2½	6/10½	82.5	10	90.75	235.2
April 6, 1953	Extra week's holiday	—	82.5	12	92.4	239.4
February 1, 1954	3/9 + 3/3½	7/0½	84.5	11¾	94.43	244.7
May 24, 1954	3/10½ + 3/5	7/3½	87.5	11½	97.56	252.8
February 7, 1955	3/11 + 3/5½	7/4½	88.5	,,	98.67	255.7
April 18, 1955	4/1½ + 3/7	7/8½	92.5	11	102.67	266.0
April 4 & 11, 1955	Holiday Stamps 1/- & 6d.	—	92.5	12	103.6	268.5
June 6, 1955	Increase Insurance	—	92.5	12½	104.06	269.7

VARIATIONS FROM 1914 TO DATE

CHARTS on this and facing page show (Chart A) the rise in wages, materials and building costs over the years 1939 to 1955, and (Chart B) the fluctuations in wages and building costs from 1914 to date. They have been compiled by Mr. H. J. Venning, FRICS.

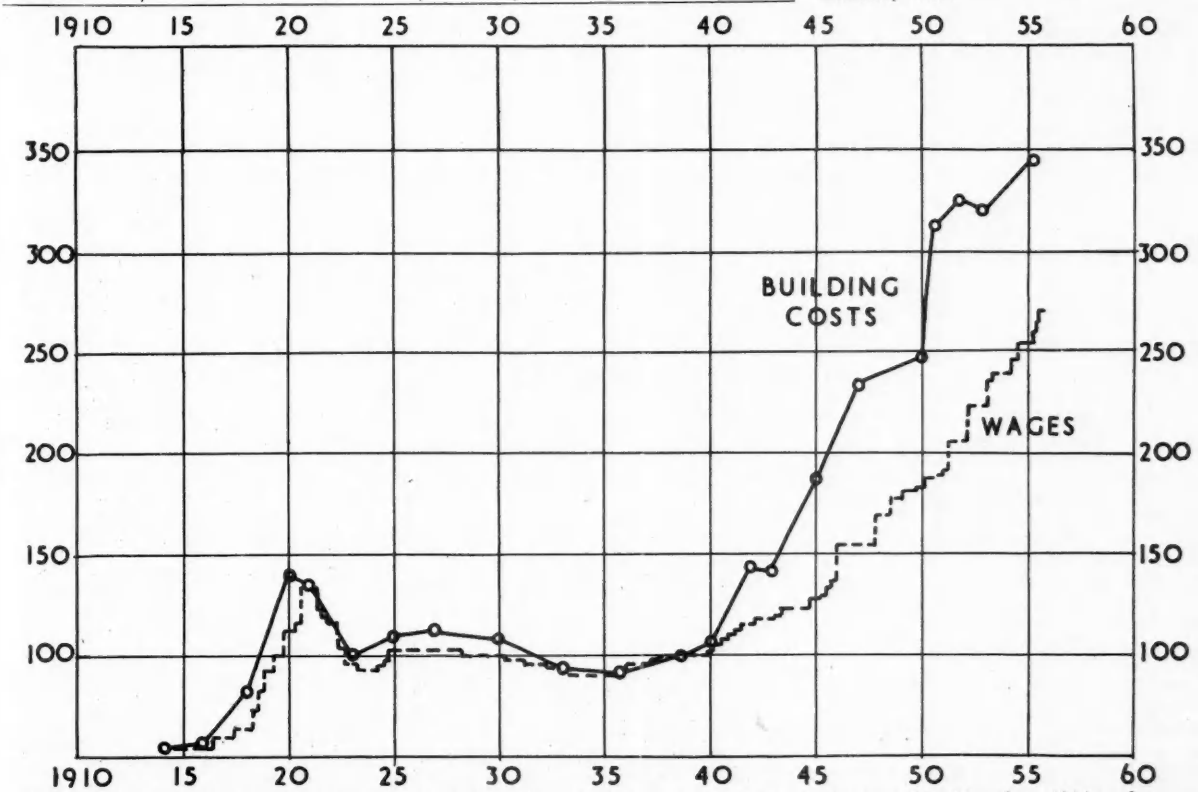
The Index stands (estimated to June, 1955) at 346 as compared with 332 at May, 1954—an increase over the period of 4.217 per cent.

The line of building costs in Chart A continues to rise faster than the lines for materials and wages. Comparison with Chart B is significant; the latter shows that soon after 1921, when there was a temporary curtailment of the house-building programme and the rise and fall clause was abolished, building costs fell steeply, and continued to do so until the clause was reintroduced in 1940.

The line showing building costs is in each case based on actual tenders for the normal run of building contracts. The line for materials is based on the figures published by the Central Statistical Office. The line for wages is based on a conventional average of one labourer to one craftsman, and takes account of the indirect benefits as shown in the Table. The line does not include anything to do with incentive payments.

REPRINTS

These charts and the accompanying data will be reprinted on stiff card for office use. Price 1s. each (plus 3d. postage for any number), copies may be obtained from the Publisher, *The Builder*, The Builder House, Catherine-street, London, WC2.



BUILDING COSTS, 1914-1955.—*This Chart (B) shows the fluctuations in Wages and Cost of Building from* 1914 *to date.*

1955. *The Index stands at 346 as compared with 332 at May, 1954. On facing page will be found itemised the various wages and other increases since 1939.*

THE ROYAL GOLD MEDAL

Presentation to Mr. John Murray Easton

THE presentation of the Royal Gold Medal for 1955 was made on April 5 to Mr. John Murray Easton, FRIBA, by the President of the Royal Institute of British Architects (Mr. C. H. Aslin, CBE). The Henry Jarvis room at Portland-place was full of Mr. Easton's friends.

As is customary, two past Gold Medalists, in the shape of Sir Percy Thomas and Sir Edward Maufe, led the new recipient to the dais where Mr. Aslin invested him with what Mr. Easton later described as the highest honour that an architect can receive.

A number of his friends, including clients, paid verbal tribute to the Gold Medalist. In the principal address, MR. HOPE BAGENAL, DCM, FRIBA, said: "It is my office this afternoon to congratulate on your behalf, on behalf of my colleagues, Mr. John Murray Easton for the honourable award of the Royal Gold Medal. The Gold Medal was instituted in 1848 by the reigning Sovereign, and Cockerell was the first winner. It is international in its range, and I think that John Easton is the sixth or seventh Scotsman to receive it.

"To speak about the work of an intimate friend and contemporary is not easy. To begin with, we elders, of course, do not think of each other as elders at all but as young sprigs passing rich on four guineas a week. Something of that freemasonry of youth goes on but, of course, a great builder and embodier must be seriously considered a force in his time, and I want just to try to give you my interpretation of his work. Easton and Robertson were distinguished without separating and I greatly appreciate the work of both, but we are speaking to-night of those buildings that we see on the wall, the Royal Horticultural Hall, the series of Cambridge University schools and laboratories, the Metropolitan Water Board building, Bart's students' hostel and, of course, a great series of hospitals.

A HAPPY PARTNERSHIP

"First of all, these buildings came out of a *milieu* of their own. They came out of an office with a happy working partnership where young men and younger men and older men worked together, carrying on that great tradition of friendliness of Stanley Hall, that good man. That office is also a school of building research and a school of æsthetics. For me those buildings of John's, with their pale, clear coloured brick walls, their windows moderate in size, their interesting grouping of parts, derived directly from the plan requirements, as in the new School of Chemistry in Cambridge, and also their careful waterproofing—often embodying that most practical, functional and scientific part, the cornice—these for me constitute the architecture of reconciliation. By that I do not mean the architecture of compromise. I have always thought that Easton is a man emancipated both from the tyranny of the old and from the tyranny of the new—all this submitted really to a rigorous experimental criticism. Thus we find experience and experiment side by side, and we find in his work the old and the new together.

"I think really that his deeper interest is in the new, but the acceptance of reality and possibly his Scottish upbringing compel him to deal with fundamentals, and the first of the fundamentals is the climate of these islands, always prising at the joints, always enforcing its terrible sanctions on each new generation of innocents. So behind these good-tempered exteriors of Easton's buildings I find a reconciliation of those conflicting claims and all decently harmonised. Also I find the aristocratic, which I define myself as refinement without loss of strength, but of course it is the hospital in which the full conundrum of the modern problem is encountered—the awful complexity and multiplicity of modern science and technology which is a reflection of the age pressing on the architect. He needs patience and pertinacity. He has to make heartbreaking sacrifices and also he has to make decisions and make other people take decisions, and psychologists tell us that fewer and fewer persons are able to make decisions. John Easton and his young men have made for themselves a great name in hospital building. They have designed and embodied those hospitals that we know so well. They fly all over the Commonwealth, and really when I think of the importance of that work, and the value to the community all over the Commonwealth, I am very glad indeed that we can honour that work to-night.

"AN INVINCIBLE FORTITUDE"

"That is for his work, and I must now say something personal. He is a man whom I have always relied on for a kind of support and invincible friendliness and something more: in time of war, in time of stress, a fortitude. When he was in Hong Kong recently, the Chinese students enjoyed his company. They said that his name was 'The Scholar,' kind and friendly, and they added 'His animal is the lion.' Then there is his wife, Ruth Tinker, an artist in her own right, a good painter and one whose career many of us here have followed with affection since the time when she was a girl. Theirs is one of those interesting modern homes where there is a noble rivalry upstairs and downstairs between art and life, each contending for absolute authority. But although hospitable, as those of you will know who have experienced 48, Hamilton-terrace, Easton is a Scot and has the gift of recollection. It was while I was recently with him that he spoke to me about his father. He said that his father was always deeply interested in architecture, that he was a friend of William Kelly and that he always longed himself to be an architect. It seems to me that he stands behind this ceremony of ours, that man that I never knew, and it seems to me that to-day that father would be proud of his son. Therefore, I want to thank John Easton from us all for excellent work done in the past and, we hope, more excellent work in the future.

Other speakers were: Mr. Basil Spence, OBE, ARA, ARSA, vice-president, RIBA; Mr. Thomas Knox Shaw, CBE, MC, Hon. ARIBA; Sir Frank Montgomery, MC; Dr. Charles Harris, LRCP; and Mr. F. Leslie Preston, FRIBA. Mr. Easton responded.

SWEDISH EXHIBITION

Selected Industrial Designs

PROBABLY the best opportunity in many years to see a representative selection of current Swedish design in many fields will be offered this summer by the Helsingborg Exhibition, which is to be held in that city from June 10 to August 28 next. Nor will the exhibition be confined to Swedish products, as ample opportunity will be provided for the other Scandinavian countries, besides Sweden, to participate. The exhibition, it is stated, will show "the contribution made by designers, architects and industry to shape the surroundings of modern man, from ordinary household objects to complete city plans." It will be a "lived in" exhibition, in which restaurants, shops, offices, school-rooms and so on, will at the same time be displaying items and functioning as units.

It is intended that "Helsingborg 1955" shall be an exhibition in the real sense of the word, not a trade fair: participation will be by invitation only, and every detail down to the tableware in the restaurant will be subjected to scrutiny. The exhibition is being organised jointly by the City of Helsingborg and the Swedish Society of Industrial Design.

COMPETITIONS OPEN

MONUMENT IN PORTUGAL.—Eliminatory test for international competition for monument to Prince Henry the Navigator at Sagres promontory, Portugal, together with scheme for provision of lighthouse and museum. (At least one architect, one civil engineer and one sculptor to be included in each competing group.) Total cost of work to be not more than 35m. escudos (£1 = 125). First Prize: 90,000 escudos. Promoted by Government of Portugal. Conditions from the Portuguese Embassy, 103, Stone-street, SW1. Closing date: May 31, 1955. *March 11, 1955.*

NATIONAL EISTEDDFOD GOLD MEDAL FOR ARCHITECTURE.—To architect of post-war building or group of buildings which has made real contribution to the architecture of the Principality. Promoted by Royal National Eisteddfod, Pwllheli. Adjudicators: Mr. Lewis John, MA, FRIBA; Dr. T. Alwyn Lloyd, FRIBA, P-PTPI. Closing date: May 1, 1955. *August 27, 1954.*

NATIONAL EISTEDDFOD PRIZES IN ARCHITECTURE.—(1) Health Centre for Pwllheli (Prize £50); (2) Redevelopment of any Carmarthenshire village (£30); (3) (for Juniors) Library for Pwllheli (£20). Not proposed that projects be carried out. Conditions from General Secretary, Eisteddfod Office, Pwllheli. Adjudicators as for Gold Medal Award. *August 27, 1954.*

*** The date in italics refers to the issue of *The Builder* in which fuller details were published.

HOUSING CONFERENCE

THE annual conference of the Housing Centre Trust will be held from July 6 to 8 at the County Hall, Westminster. Its theme will be "The Next Million Houses: Where Are They To Be?" Details from the Secretary of the Trust at 13, Suffolk-street, Haymarket, SW1.

Practical teaching blocks from east.

Hitchin High School for Girls

C. H. ASLIN, CBE, PRIBA, HERTFORDSHIRE COUNTY ARCHITECT

R. RADFORD, ARIBA, ARCHITECT-IN-CHARGE

JOHN WILLMOTT & SONS (HITCHIN), LTD., BUILDERS

HITCHIN High School is the second school to be completed of the Hertfordshire County Council's 1952-53 Secondary School Building Programme. It is a four-form entry senior mixed school for 600 girls, and was designed to replace an existing school in an old building in Hitchin and provide for its expansion. The new school was opened by Queen Elizabeth the Queen Mother on March 29.

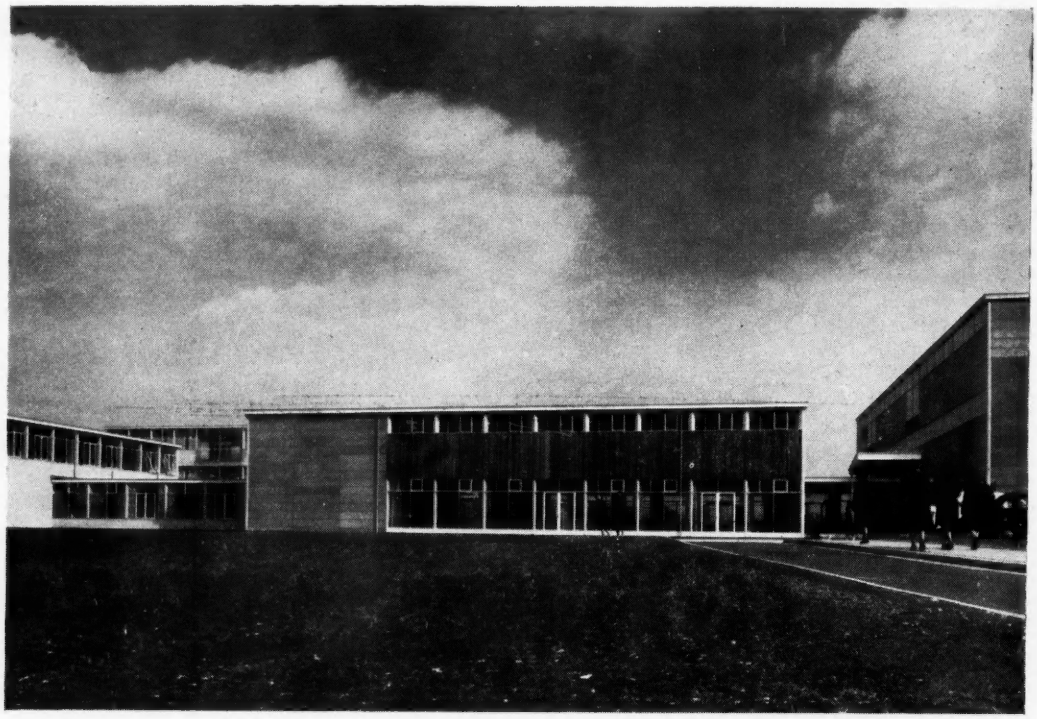
Site: The school is outside Hitchin on the east side of the Bedford road. It is in an exposed position and the building stands on the brow of the hill; there are no existing trees, but views are reasonably good in all directions. The design of the entrance drive and the appearance of the building from this direction obviously had to be carefully considered.

Plan: The central areas of the school, i.e., assembly hall, dining-rooms, entrance hall and gymnasium, form a single-storey link between the two three-storey teaching wings. The practical teaching wing contains the art and craft rooms, the science laboratories and the music room. Since this is a girls' school, there are no heavy workshops, but there are additional facilities for domestic science. Senior domestic science rooms are planned in a single-storey unit at one end of the three-storey block. The block faces east and west, and all teaching rooms in it are lit from both sides. The general teaching block contains the quiet classrooms, the library and the division rooms used for study by senior pupils. All these rooms face south and all the larger ones are also lit and ventilated from the north.

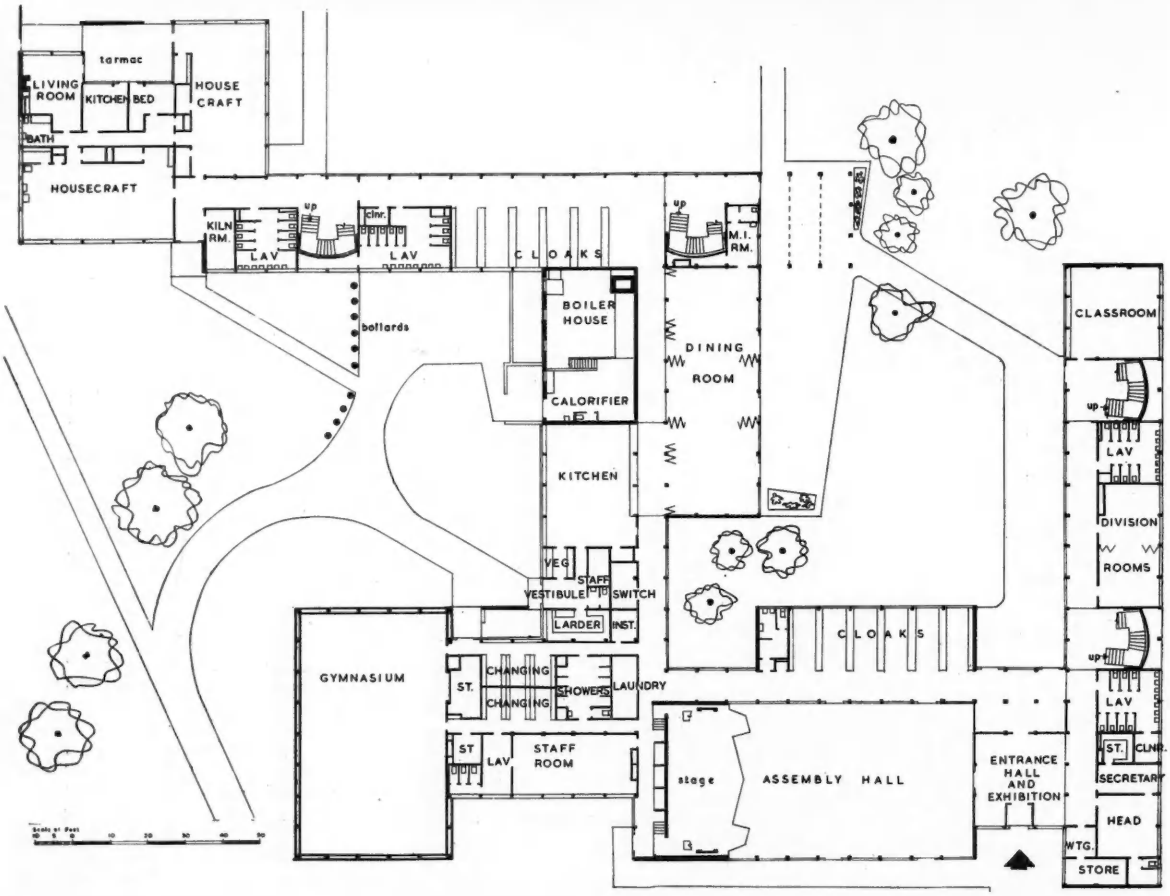
All the circulation in the centre of the school is arranged around a courtyard. This court combines with the main internal areas to give a sense of space and interest in the middle of the school and to unify the building.

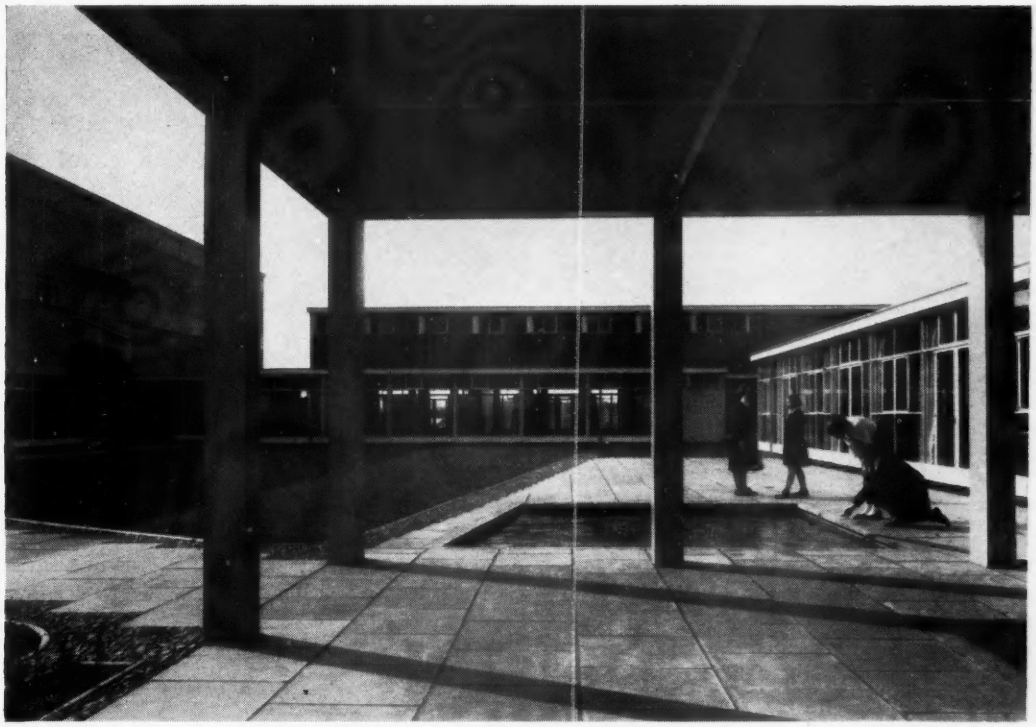
Construction and Finishes: GENERAL. This is the second school to be completed in the county with the standard 8 ft. 3 in. steel frame modified to permit three-storey construction. The main components are identical to those used in five other secondary schools of the 1952-53 programme.

FRAME 5½ in. square welded box stanchions are used for single-storey and 5½ in. by 9 in. stanchions for multi-storey. Beams are welded steel lattice. FOUNDATIONS. Mass concrete pads under stanchions. Reinforced concrete edge beam and 5 in. partially reinforced site slab. EXTERNAL WALLING. 8 ft. 3 in. by 1 ft. 4 in. precast concrete cladding blocks span horizontally between stanchions. Inner linings are clinker block plastered. Western red cedar vertical weatherboarding is also used.

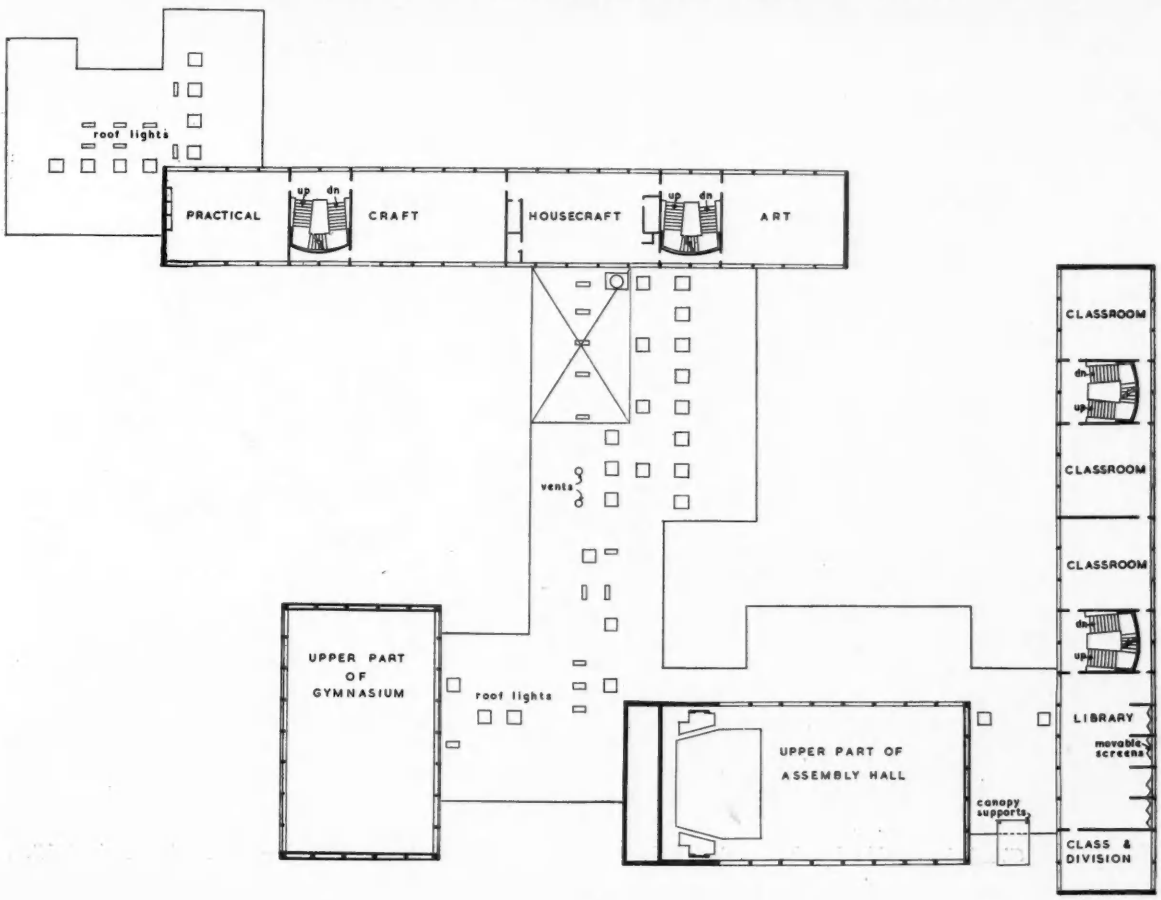


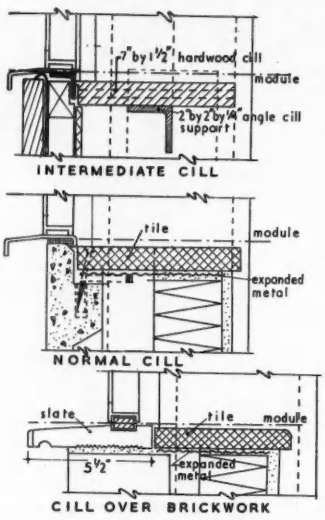
View of gymnasium (left), assembly hall and main entrance. Below : Ground-floor plan.



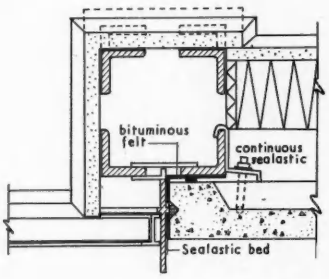


View of courtyard under 3-storey practical teaching block. Below : First-floor plan.

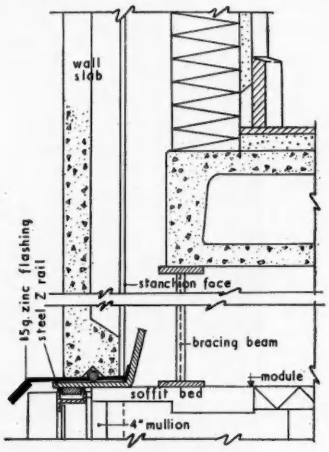




DETAIL SC 10/65 - WINDOW CILL ASSEMBLIES



DETAIL SC10/22-END WINDOW MULLION ASSEMBLY

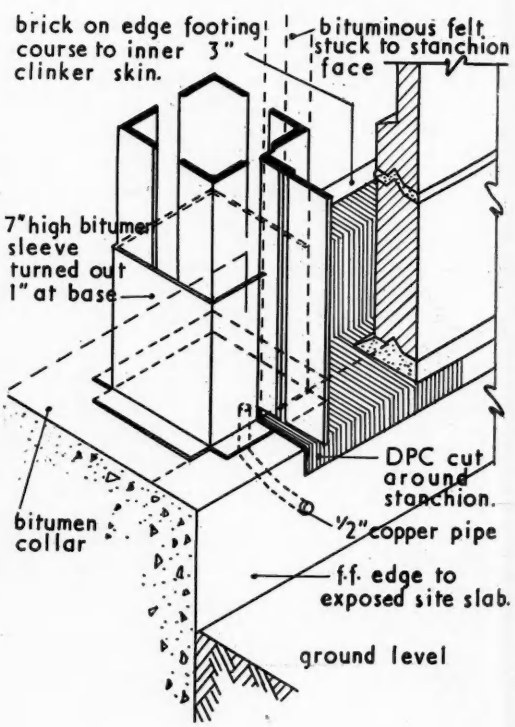


DETAIL SC/10/38 –VERTICAL SECTION THROUGH FLOOR.

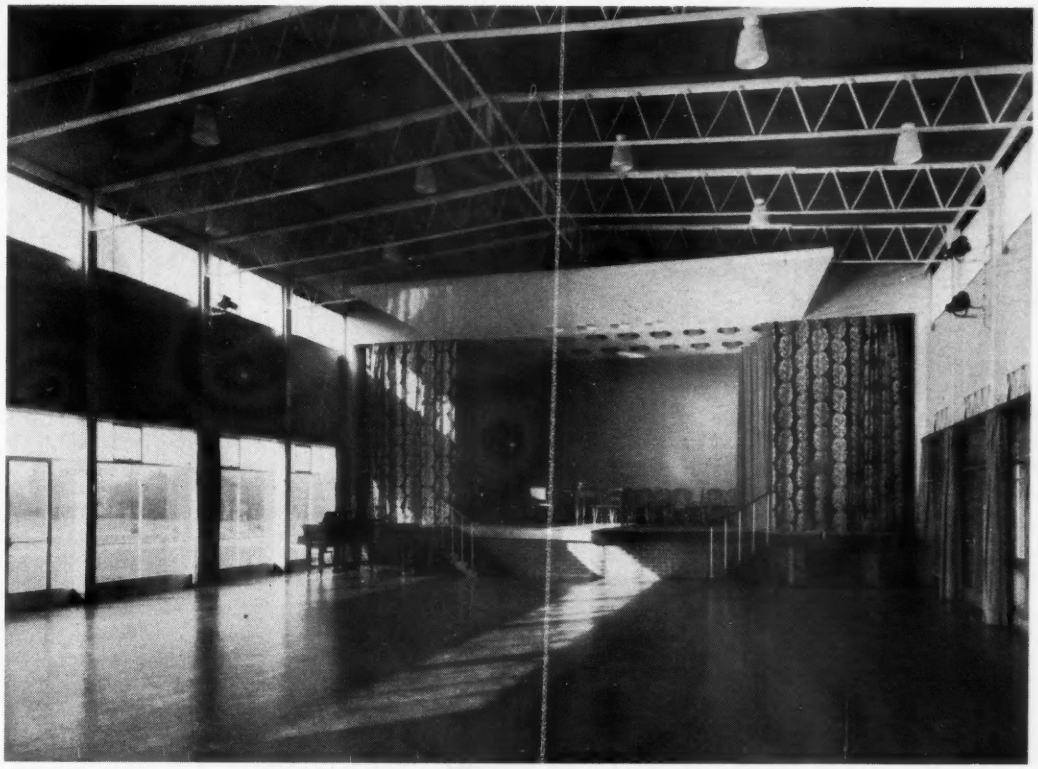
WINDOWS. Galvanised steel windows meet across the face of stanchions and are located by a " Detroit " mullion fixed to the stanchion to form curtain walling. ROOF. Hollow precast concrete blocks with insulating screed are used, and are covered with two layers of bituminous felt. UPPER FLOORS. 5 in. thick precast concrete hollow blocks. These are finished with Semastic tiles, or with studded rubber tiles where it is necessary to reduce sound. On the ground floor finishes are Semastic tiles, quarry tiles, precast terrazzo, hardwood block and cork.

CEILINGS. Roof beams are exposed under ceilings of single-storey blocks and under ceilings of top floors of multi-storey blocks. Elsewhere, suspended ceilings are used for fire protection. Ceiling finishes consist of plastering direct on concrete soffits, perforated plaster board and glass silk, and perforated fibrous plaster and glass silk. In general, ceilings have been designed to give high sound absorption. HEATING. Warm air is circulated by electric fans through heater batteries in cabinets. Batteries are heated by hot water circulated from a central boiler house. FURNITURE. All fixed furniture was

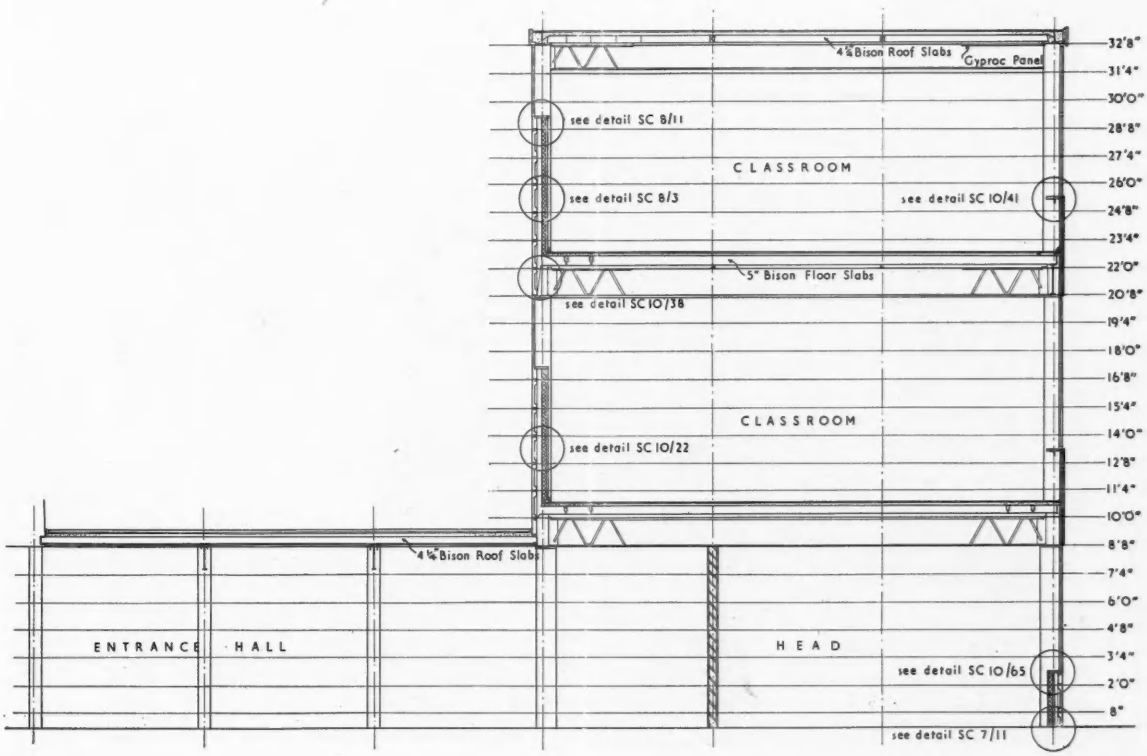
Circulation corridor in quiet teaching block.

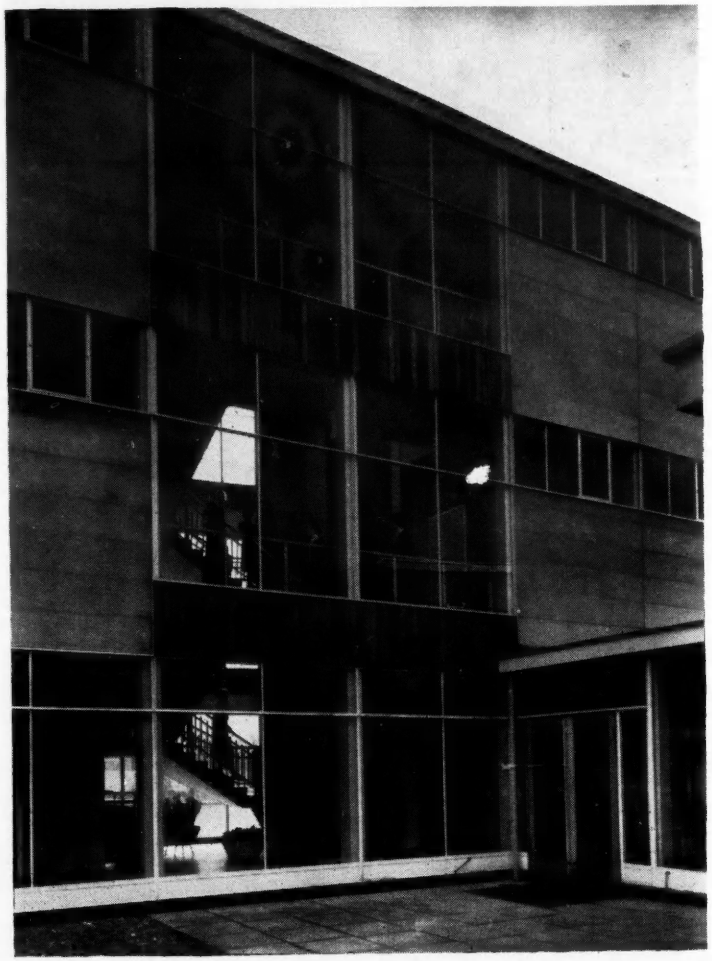

brick on edge footing course to inner clinker skin.
3"
bituminous felt stuck to stanchion face
7" high bitumen sleeve turned out 1" at base
DPC cut around stanchion.
½" copper pipe
bitumen collar
f.f. edge to exposed site slab.
ground level

Detail SC 7/11—DPC straight walls cladding.

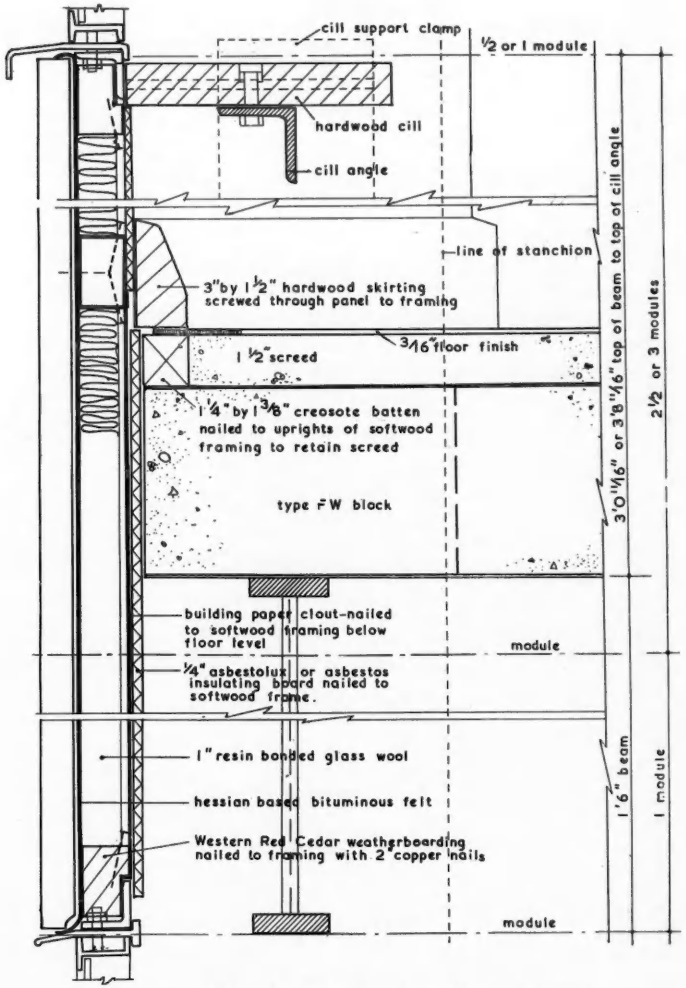


The assembly hall. Below · Section through entrance hall and classroom block.





External view showing staircase.


cill support clamp
½ or 1 module
hardwood cill
cill angle
line of stanchion
3"by 1½" hardwood skirting screwed through panel to framing
1½" screed
3/16" floor finish
1¼" by 1⅜" creosote batten nailed to uprights of softwood framing to retain screed
type FW block
3'0 11/16" or 3'8 11/16" top of beam to top of cill angle
2½ or 3 modules
building paper clout-nailed to softwood framing below floor level
module
¼" asbestolux or asbestos insulating board nailed to softwood frame.
1" resin bonded glass wool
hessian based bituminous felt
Western Red Cedar weatherboarding nailed to framing with 2 copper nails
1'6" beam
1 module
module

Detail SC 10/41—Section through weatherboard panels.

designed by the architect. In addition some of the loose furniture was also designed by the architect.

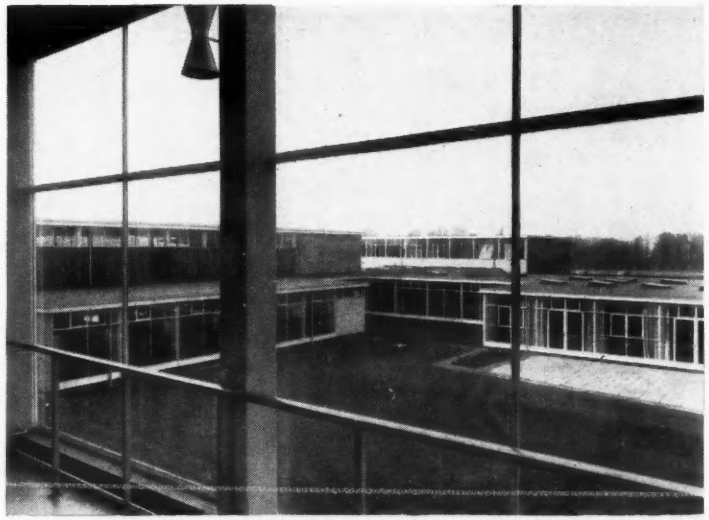
Nominated Suppliers were: A. J. Binns, Ltd., cloakroom equipment; Camden Tile and Mosaic Co., terrazzo paving; Compra Plastics, Ltd., P.V.C. numeral signs; Econa Modern Products, Econa waste fittings; Gee, Walker & Slater, Ltd., fitted furniture; Greenwood's and Airvac Vent. Co., Ltd., Airvac extractor units; Griffin and Tatlock, Ltd., centrifugal fan, ducting and base for fume cupboard; Henry Greenham, facing bricks; James Gibbons, ironmongery; Hills (West Brom.), Ltd., rainwater sumps and pipes.

L. and G. Fire Appliances, fire appliances; Leaderflush, Ltd., doors; Walter Lawrence and Son, Ltd., concrete flower pots; Wm. Mallinson and Sons, Ltd., w.c. cubicles and showers; Power Utilities, Aeron draught balance stabiliser; Plyglass, Ltd., Vitroslab, Spotlyte face; Rolyat Tank Co., Ltd., copper calorifier; Stitsons Sanitary Fittings, sanitary fittings; Twisteel Reinforcement, high tensile bar and fabric reinforcement; John Williams and Co., Welsh slate cills; and Westland Engineering, Welrise doors.

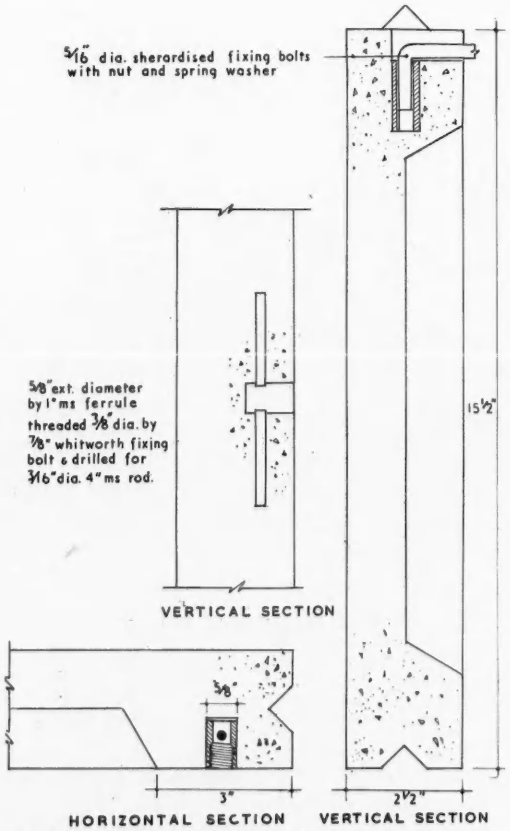
Nominated Sub-Contractors were: Concrete, Ltd., "Bison" precast floor and roof blocks; Crittall Manufacturing Co., metal windows, doors and screens; Claridges (Putney), Ltd., fibrous plaster-work; Cork Insulation and Asbestos Co., cork tile flooring; Eastern Gas Board, gas installation; Esavian Ltd., folding sliding partitions; B. Finch and Co., Ltd., aluminium roofing; Granwood Flooring Co., "Granwood" flooring; Hollis Bros., "Semastic" decorative tiles and special flooring; Hitchin U.D.C., water supply; Hills (West Brom.) Ltd., steel framing; Hall and Dixon, Ltd., steel curtain track.

London Blinds, blinds and accessories; Penfold Fencing and Engineering, chain link fencing; Quickset Water Sealers, Ltd., waterproofing work; Olympic Gymnasium Co., Ltd., gymnasium apparatus; Ragusa Asphalte Paving Co., Ltd., mastic asphalt paving and tanking, felt roofing; Shutter Contractors Ltd., beech shutters; E. Wight and Co., electrical installation; Weatherfoils Heating Systems, heating installation; James Walker, architectural decorations; and Brynmawr Rubber (Sales), Ltd., rubber studded tiles.

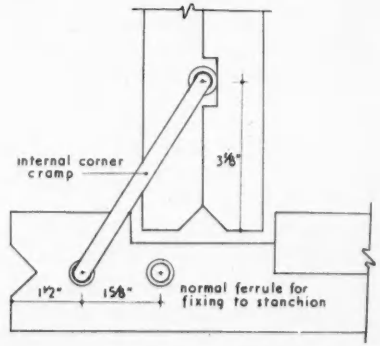
Builders' approved sub-contractors were: Charles Bird and Sons, Ltd., glaziers; General Asphalte Co., Ltd., Tarmac road, playground and tennis courts; R. F. Jones, plastering; Morfey (Slaters and Tilers), Ltd., floor and glazed wall tiling; and Howley Decorations, Ltd., decorations.



View from second floor into the courtyard.


5/16" dia. sherardised fixing bolts with nut and spring washer
5/8" ext. diameter by 1" ms ferrule threaded 3/8" dia. by 7/8" whitworth fixing bolt & drilled for 3/16" dia. 4" ms rod.
15½"
VERTICAL SECTION
5/8"
3"
2½"
HORIZONTAL SECTION
VERTICAL SECTION

DETAIL SC 8/3 – FIXING OF STANDARD 'K' TYPE BLOCKS



DETAIL SC 8/11. RE-ENTRANT CORNER CILL BLOCKS.

Hitchin High School for Girls

Architect for City of London

A NEW POST TO BE CREATED

APPLICATIONS are invited from members of the Royal Institute of British Architects, in an advertisement elsewhere in this issue, for the whole-time appointment of City Architect at a salary between £3,250 and £3,500 per annum according to qualifications and experience. The City Architect will advise on the exercise of planning powers in the reconstruction and development of the City of London, and be in charge of all architectural services of the Corporation. Full particulars of the office and forms of application from Mr. E. H. Nichols, Town Clerk, 55/61, Moorgate, EC2. Completed applications to be returned by May 9.

BACKGROUND TO APPOINTMENT

In a report made to the Common Council on March 31, the Officers and Clerks Committee recount that, as a result of a Conference held on September 24 last to examine the desirability of rearranging the several duties carried out by the City Surveyor, the City Engineer, the City Planning Officer and the staff under their control, a new City Surveyor was appointed on the basis of the existing duties, subject to revision as a result of reconsideration of such duties and those of other officers, on the understanding that the principal duty of the City Surveyor would be valuation and estate management.

The report continues: "At the same time the Conference, having considered the existing distribution of surveying, engineering, architectural and planning duties among the departments of the Corporation, and in particular the employment of a number of qualified architectural assistants in different departments, asked the Improvements and Town Planning Committee for their views on the Corporation's architectural services. That Committee considered that it would be desirable to have expert opinion on the advantages and disadvantages of appointing a City Architect, and accordingly obtained a Report from Sir Lancelot Keay, KBE, a former President of the Royal Institute of British Architects, and Sir William Holford, a former President of the Town Planning Institute.

"This Report advised 'in principle, and certainly for the future, the soundest recommendation we can make is the appointment of a City Architect to take over central responsibility for all architectural work and architectural advice in the various departments of the Corporation; leaving the functions of the City Engineer, and of Estate Manager and Valuer, to be exercised by independent Departments,' and the Improvements and Town Planning Committee expressed the opinion that a City Architect should be appointed to be responsible for all architectural work to be undertaken on behalf of the Corporation, together with the control and direction of the City Planning Office, at a salary which would ensure the appointment of an officer of eminence and experience. The above-mentioned Conference, having met again on March 24, 1955, concurred in this view and recommended to the Officers and Clerks Committee that a City Architect be so appointed.

"Since the submission in 1947 of their final report on reconstruction, Dr. C. H. Holden and Sir William Holford have been retained as consultants to give advice and assistance to the Improvements and Town Planning Committee on architectural and town planning matters generally. On February 4, 1954, your Honourable Court approved an arrangement for the services of the consultants to be available to that Committee on an extended basis for an experimental period of 12 months from February 1, 1954. In view of the special and urgent task which it is proposed should be undertaken by Sir William Holford on the preparation of a scheme for St. Paul's Precinct, this arrangement has not been renewed, and it is therefore a matter of the utmost urgency that alternative arrangements should be made to enable the Improvements and Town Planning Committee to continue to have the benefit of the advice and assistance of an architect of eminence and experience.

THE ARCHITECT'S DUTIES

"The prime responsibility of a City Architect in the immediate future would therefore be the control through planning powers of aesthetics and design of new buildings in the City, and liaison with the officers of the Ministry of Housing and Local Government and other Government Departments, of the London County Council, and the Royal Fine Art Commission. He would also be required to have charge of those architectural services now performed in several departments, on which no fewer than 11 qualified architects are at present employed, largely under the control of members of other professions. It will be essential for the new City Architect to work with the City Engineer and the City Surveyor as members of a team.

"In due course the City Architect would be responsible for the services which have hitherto been performed by architects engaged from time to time on special projects. Since April 1, 1949, over £90,000 has been spent on architects' fees, and although there are some specialised works which might demand the engagement of outside architects, a City Architect should be able to undertake a large part of this work.

OTHER DUTIES REARRANGED

"When the appointment of a City Architect has been agreed upon, it will be possible to proceed with the rearrangement of the duties of the Surveyor's, Engineer's and Planning Offices; but it is anticipated that such a review will take several months to complete, and it will therefore be necessary for the existing Establishments of the Surveyor's Office and City Planning Office to be extended beyond April 1, 1955, the date on which they are due for review, for a period not exceeding one year and your Committee recommend accordingly, and further, that the Committee be authorised to re-allocate the positions in the existing Establishments, pending the submission of revised Establishments."

No age limit on candidates for the post of Architect is laid down. The appointed architect (to be chosen from a short list of not more than five by the Officers and Clerks Committee) shall not engage in any other business or occupation, but shall devote the whole of his time and attention to the duties of his office.

GRANTS TO 38 HISTORIC BUILDINGS

Fifth List of Recommendations

DURING the past three months 38 grants for the preservation of historic buildings, their contents and adjoining land have been offered and accepted. The grants, totalling over £120,000, are offered by the Minister of Works, acting on recommendations by the Historic Buildings Councils for England, for Scotland and for Wales. The 38 buildings are as follows:—

ENGLAND

Kirkleatham Hospital, Yorks; Browsholme Hall, Yorks; Burghley House, Northants; Cold Overton Hall, Rutland; Courteenhall, Northants; Brick House, Great Hormead, Herts; 18, Melbourn Street, Royston, Herts; Kimbolton Castle, Huntingdonshire; Ampthill Park, Beds; Belchamp Hall, Essex; Old Hall, Snettisham, Norfolk; Old Byfleet—Manor House, Surrey; Knole, Kent; Hollingbourne Manor, Kent; Tythrop House, Bucks.

Waddon House, Dorset; Chettle House, Dorset; Nether Lypiatt, Glos; Flaxley Abbey, Glos; 68, The Close, Salisbury; Saltram House, Devon; Shute Barton, Devon; Bishop's Palace, Salisbury; Cottages at Bibury, Glos; 21 and 22, The Circus, Bath; Harvard House, Stratford-on-Avon, Warwicks; Stanwardine Hall, Shropshire; Condover Hall, Shropshire; Market Hall, Ross-on-Wye; Kenyon Peel Hall, Lancs; Little Moreton Hall, Cheshire; Gawthorpe Hall, Lancs.

SCOTLAND

Provost Ross's House, Aberdeen; Barcaldine Castle, Argyllshire; Arniston House, Midlothian; Pourie Castle, Angus; Houses in Cathedral-street and High-street, Dunkeld (second grant).

WALES

Chirk Castle, Denbighshire (second grant).

Three of the buildings were unoccupied when they were brought to the attention of the Historic Buildings Council for England. It is due to the efforts of the Historic Buildings Bureau that people or organisations interested in using them were found. Grants for repairs recommended by the Historic Buildings Council then enabled them to be brought into use again—Tythrop House as a private residence, Kenyon Peel Hall as flats for old people, and Ampthill Park House as a home for the sick.

With the grants announced on March 25, July 5 and October 4, 1954, and January 6, 1955, the total number of buildings assisted under the Historic Buildings and Ancient Monuments Act is now 150, and the total value of grants is about £405,000.

Nearly 640 applications for aid have so far been received by the three Historic Buildings Council, of which about 310 have so far been rejected.

NEW QC

THE QUEEN, on the recommendation of the Lord Chancellor, has approved the name, among others, of Mr. Derek Walker Smith for appointment as Queen's Counsel.

News of the Week

A SOHO FAIR

LONDON is often said, probably with some justice, to lack the gaiety of other capital cities. However this may be, an attempt is to be made to remedy this by the holding of a Soho Fair from July 10 to 16. The sponsors are the Soho Association, Ltd., which aims to create good will for and promote the many enterprises of Soho, "the most interesting and fascinating square mile in the world."

The Fair will be inaugurated by a dedication service in St. Anne's churchyard; the streets and premises will be decorated in national colours. During the week following there will be a Mardi Gras procession including decorated floats, wine tastings, a waiters' race, Gala performances at the theatres and cinemas in the area, exhibitions, pageants, folk dancing, a Concours d'Elegance, a Beauty Queen Competition, culinary art and gastronomic competitions, a ball, a swimming gala, concerts, recitals and the performance of a specially written work.

THE SPAB ANNUAL COURSE

THE Society for the Protection of Ancient Buildings is again providing facilities for architects interested in and responsible for old buildings to obtain knowledge of its principles and methods of repair, and is arranging its annual course, consisting of lectures, discussions and visits, to cover the many important aspects of repair work.

The society is anxious that more architects should understand not only traditional constructional methods but also the principles underlying the sympathetic and conservative treatment of old buildings, whether ecclesiastical or secular. In view of the specialist nature of work of this character the society believes that the opportunity to study at first hand some of the problems which arise will be helpful to architects interested in this subject. It is also hoped that local authorities and others will be able to give facilities to the architect members of their staff to take advantage of this scheme.

The course will be held from May 16 to 21. Details from the Secretary at 55, Great Ormond-street, WC1.

OSBORNE HOUSE REOPENED

OSBORNE HOUSE has been reopened to the public until the second Friday in October, on Mondays, Wednesdays and Fridays, from 11 a.m. to 5 pm. For the first time, states the Ministry of Works, Queen Victoria's private apartments will be on view. These include the bedroom where the Queen died on January 22, 1901, her dressing and bathroom, her sitting-room, the Prince Consort's dressing and writing-room, and his bathroom (admission 2s.).

The MoW also announces that the Queen has consented to the loan of pictures, bronzes, china and personal relics of King George III, Queen Charlotte and their children, and of period furniture, for the refurnishing of Kew Palace, and that the public will be able to see the collection this season (Mondays to Saturdays 11 a.m.-6 p.m.; Sundays 1 p.m.-6 p.m.) until the beginning of October (admission 6d.).

SURREY COUNTY HALL

MR. E. VINCENT HARRIS, OBE, RA, FRIBA, has written to point out that he was not, as reported in our last issue, the architect for the extension of the Surrey County Hall after the war, but that the work was carried out by the Surrey County Architect. We regret the error.

HOSPITAL BUILDING

THE North West Metropolitan Regional Hospital Board are inviting applications from architects with suitable experience for several major schemes of hospital development on which the Board expect building to commence within the next two to three years. Further details are given elsewhere in this issue.

TO STUDY AT YALE

MR. PETER A. PAGE, who graduated with first-class honours in the Department of Architecture, the University of Sheffield, in June, 1954, has been awarded a Henry Fellowship of £1,000 tenable for one year in Yale University, USA. Mr. Page has been, since he graduated, in the office of the County Architect of Essex.

DOVER FLATS APPOINTMENT

DOVER TOWN COUNCIL have approved the appointment of Messrs. D. E. White and G. S. Gummersall as consulting engineers for the structural engineering work in connection with the erection of 223 flats on Dover seafront. The architects are Messrs. Dalgliesh and Pullen.

PROFESSIONAL ANNOUNCEMENTS

MESSRS. MACCONVILLE FRASER & SYMONDS, of Parliament Mansions, Abbey Orchard-street, Westminster, SW1, announce that MR. EDWARD A. PYSER, ARICS, who has been for many years an assistant with the firm, has been made an associate partner. The style of the firm remains unchanged.

MR. A. STERN, ARICS, and MR. J. ALBERS, ARICS, have commenced in private practice as chartered quantity surveyors under the title of MESSRS. STERN AND ALBERS, at 66, Victoria-street, London, SW1, where they will be pleased to receive trade catalogues.

MESSRS. GEORGE CORDEROY & CO., chartered quantity surveyors, have transferred their office in the North-West area to 41, White Friars, Chester, where they will be pleased to receive trade catalogues.

MESSRS. LANGDON & EVERY, chartered quantity surveyors, have moved their offices to 21, Russell-square, WC1 (tel.: Langham 9051/8).

The firm of RUTTER AND LOWE, quantity surveyors, have removed their offices from King's Heath, Birmingham, to 171, Alcester-road, Moseley, Birmingham, 13 (Tel.: South 1988).

MESSRS. CROSS AND HALL, quantity surveyors, 34, Victoria-street, SW1, have taken into partnership MR. E. KEITH CROSER, ARICS, and MR. EDWARD A. WEAVER, FIAS, both of whom have been senior members of the firm for a number of years. The style of the firm will remain unchanged.

FROM "THE BUILDER" OF 1855

Saturday, April 14, 1855

BRICKS FROM SLAG.—The proposition to make bricks from the refuse of iron foundries appears to gain favour. Relative to some recently made, the manager of the Dowlais Iron Works, who has seen them, draws particular attention to the fact that it costs the ironmasters £150,000 per annum to throw away what he is convinced might be made an article of immense commercial value.

OXFORD DEVELOPMENT

"Major Issue" Not Covered

IN a letter to the Mayor of Oxford, dated April 1, The Rt. Hon. Duncan Sandys, MP, Minister of Housing and Local Government, writes that in the light of the helpful explanations given to him at a meeting with the Council on March 26, he is happy to signify his general agreement with the proposals contained in the City of Oxford Development Plan.

The letter continues: "The Plan contains two features which are particularly welcome. First, it provides (in conjunction with the surrounding counties) for a complete ring of outer by-pass roads, which will make it unnecessary for long-distance traffic to pass through the city. Secondly, it envisages the creation of a substantial shopping centre in Cowley, which should do something to reduce the daily influx of people from East Oxford to the central shopping area around Carfax. Therefore, subject to certain detailed points which are being discussed between our officials, I shall shortly be ready to give my formal approval to your Plan. However, before doing so, I am anxious to know your intentions in regard to a major issue which, for reasons which I fully understand, are not covered by your first plan, namely the problem of traffic congestion in the University area, notably along the High.

A PRICELESS HERITAGE

"This is, of course, not primarily a traffic problem. It is the question of preserving a priceless heritage of culture and beauty. The appearance and unique atmosphere of this great University City, which is renowned and beloved the world over, are being much spoilt by the endless column of motor vehicles which choke its famous streets; not to mention the structural damage caused by vibration from the ceaseless flow of traffic past its ancient college walls.

"In recent years the feeling that something must be done has been growing ever more insistent. This has, as you know, lately taken the form of a request to the Government to set up an independent Commission of Inquiry to investigate the whole matter and propose a solution. . . . I should, however, be reluctant to accede to it, since it is the responsibility of the City Council to deal with this matter themselves. Moreover, at my meeting with you and your colleagues last week, you left no doubt in my mind that the Council are as keen as anyone to protect Oxford's architectural glories and academic amenities, which are entrusted to their care. In fact, you explained to me that, far from ignoring this problem, you have for some time been considering a scheme for internal relief roads, including the replanning of the eastern approaches to Magdalen Bridge, in such a way as to encourage traffic to use these new roads in preference to the High Street.

"The Minister of Transport and I would be glad to know whether we may assume that your Council will shortly be submitting proposals to us . . . ."

TOWARDS HIGHER PRODUCTIVITY

2.—The Phasing of Housing Site Operations

By R. ROSNER, ARIBA, AMTPI

THE efficiency of many building operations is likely to increase if they are repeated several times by the same team of operatives. This, briefly, is the essence of precise phasing and may not, at first glance, appear to be a very novel idea, for when a row of identical houses is built, some kind of phasing is likely to be adopted; phasing, particularly when related to the construction of multi-storey blocks, however, is a recent development.

In Germany, a number of medium-sized and large housing estates have been built with the aid of precise phasing and investigated by the Hanover Building Research Institute. Operations consist of minor phases grouped into major phases. The latter may include walls, partitions and floors of one storey, whilst the former may only consist of a part attended to by a specialist team which will repeat its operations from commencement to completion of a scheme, e.g., floors or portions of walls. Phasing can be arranged in horizontal or vertical succession (Fig. 1).

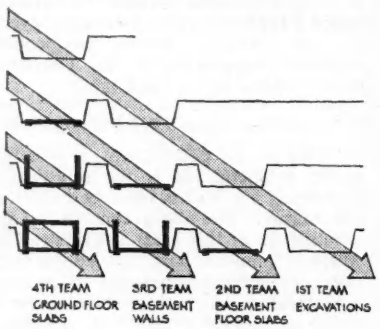


Fig. 1.—Horizontal phasing.

A successful example of horizontal phasing was demonstrated when 240 dwellings grouped in nine three-storey blocks of flats were built in Munich. The first team carried out the excavations for each block. The second one, with mobile concrete mixers, laid all foundations. The third team built internal skins of lightweight concrete blocks for the basement walls. The fourth team concreted the external skins of the basement walls *in situ*, and subsequent teams concreted the ground floors and assembled the prefabricated units for the walls and floors of the upper storeys. Each team started work 1½ weeks after its predecessor. This precluded any overlapping. Time saved amounted to about 15 per cent. of the total when compared with similar estates built with traditional methods and organisation.

In Hamburg 17 blocks of two-storey flats were erected using an identical method of construction.

LIGHT TRAVELLING CRANES

The use of tower cranes was ruled out because frequent removal from one pair of terraces to the next would have been cumbersome and costly. They are generally more suitable for large sites with tall blocks. Instead, light travelling portal cranes were tried, sufficiently wide to span not only across the width of a terrace but also to permit on either side the unloading of wall and floor slabs from lorries. The cranes also proved too immobile for this particular scheme and were replaced by smaller, specially manufactured lifting devices and two-storey travelling steel scaffolds on rubber wheels. The latter were used for the application of external rendering.

For the analysis of comparative costs, two identical terraces were built: one prefabricated, and one in traditional brick construction. The Hanover Research Institute, which supervised and analysed all operations, found prefabrication 17·5 per cent. cheaper and twice as fast.

The most remarkable experiment in phasing was undertaken in Schleswig-Holstein on a scheme of 24 units (Fig. 2), where phases were grouped thus:

(*a*) Zero phase, i.e., preparations prior to phase 1.

(*b*) Preparatory phase, i.e., preparation for any operative phase.

(*c*) Operative phase, i.e., work on structures, services, finishes, etc.

(*d*) Dormant phase, i.e., time required for the hardening of concrete, drying of finishes, etc., stoppage through adverse weather conditions.

(*e*) Reserve phase, i.e., various works reserved for stoppages resulting from (*d*).

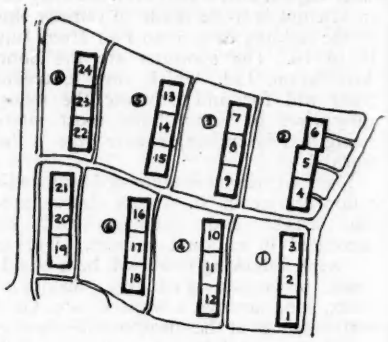


Fig. 2.—Schleswig-Holstein. This estate was phased on the basis of 24 units, each incorporating an access staircase and six identical three-room flats.

All phases were numbered and their succession outlined in a timetable divided into hours and minutes (Table 1). If one firm was responsible for numerous consecutive phases, a certain latitude could be permitted in their arrangement.

Each phase was defined by specifications, assessment of quantities (when required) and drawings. Thus the plan for a basement had to be replaced by approximately six distinct details. The drawing for phase 2 indicated the lower portions of basement walls, phase 4 upper wall portions; drawings for phases 1 and 3 outlined the rational

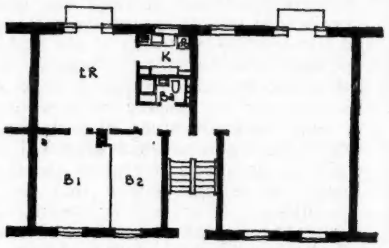


Fig. 3.—Schleswig-Holstein. Plan of one of 24 identical units which were used as the basis for precise phasing.

TABLE I

No.	Storey	Operation	Team	Number of hours required			Number of operations			Man-time quotient	Working time		
				Tradesmen	Auxiliary workers	Total	Tradesmen	Auxiliary workers	Total		Day	Hour	Until
1	Basement ...	Internal and external shuttering ...	Sch.	10	31	41	8	22	30	1.4	Monday	6.00	7.24
2		Internal shuttering and cleaning up ...	„	11	33.5	44.5	8	22	30	1.5	„	7.24	8.54
3		Tea break	„	4	11	15	8	22	30	0.5	„	8.54	9.24
4		Internal shuttering	„	16	49	65	8	22	30	2.2	„	9.24	11.36
5		Lunch break	„	4	11	15	8	22	30	0.5	„	11.36	12.06
6		Partitions, transport	„	7	20	27	8	22	30	0.9	„	12.06	13.00
7		Partitions	„	9.5	28.5	38	8	22	30	1.3	„	13.00	14.12
8	Above basement	Reinforcements to ground floor slab. ...	S	10	26	36	8	22	30	1.2	„	13.00	14.12
9	Basement ...	Concreting of walls	B	24	36	60	8	12	20	3.0	„	14.00	17.00
10		Break	„	4	6	10	8	12	20	0.5	„	17.00	17.30
11		Concreting of walls	„	32	48	80	8	12	20	4.0	„	17.30	21.30
12		Break	„	4	6	10	8	12	20	0.5	„	21.30	22.00
13		Concreting of walls and floor slab cleaning-up	„	24	36	60	8	12	20	3.0	„	22.00	24.00
											Tuesday	0.00	1.00
14	Ground floor	Internal and external shuttering ...	Sch.	13.5	43.5	57	8	22	30	1.9	„	5.00	6.54
15		Internal shuttering cleaning up ...	„	8.5	24.5	33	8	22	30	1.1	„	6.54	8.00
16		Tea break	„	4	11	15	8	22	30	0.5	„	8.00	8.30

Excerpt from a typical timetable describing the construction of a reinforced concrete basement. The numbers should not be mistaken for those of phases. Actually only about three phases are included; these are described in a separate document.

disposition of materials and implements required for phases 2 and 4. Each operational phase allowed for the cleaning and clearing of the operational area for the next phase. A team of labourers, semi-skilled operatives or tradesmen specialised in one particular repetitive phase, e.g., the lower portion of the brickwork in one storey was handled by one team, the upper portion by another.

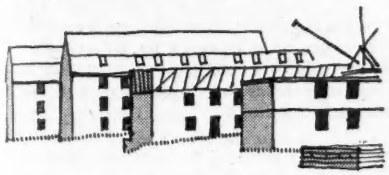


Fig. 3a.—Schleswig-Holstein. Phasing of three-storey blocks of flats. On the extreme right the self-climbing crane. The blocks can be seen in various stages of construction.

The scheme consisted of eight three-storey blocks, with three staircases in each block serving six flats. Each staircase with its adjoining six flats was considered as a structural unit (Figs. 2 and 3). There were 24 such units which formed the basis of phasing, and each team repeated a specialised operation 24 times. Each phase had to be completed within one day, so that the next team could move in the following morning. I have been told this was extremely tight organisation, for a lagging team would have delayed all subsequent teams. The experiment was, however, blessed with a good measure of luck and the timetable remained essentially unaffected. As a result, once the first unit had been completed, another unit was completed during each of the consecutive days. It took little more than 20 weeks to complete 144 flats. For future undertakings of this kind it may prove more practical to allow at least two days instead of one for each phase (Figs. 3a and 3b).

In Hanover, 160 flats in 16 five-storey blocks, with *in situ* concrete walls, were erected in alternating vertical and horizontal phases. The shuttering and placing of concrete for each storey of each block represented one phase. Work started on the ground floor, was taken to the fourth floor and then started again on the ground floor of the next block to be taken up to the top storey. One team of 16 to 20 men prepared storey by storey the shuttering and following on, a team of 14 men placed concrete for walls and floors. When the various phases had been repeated a number of times, output rose. Shuttering was completed 21 per cent. and concreting 13 per cent. faster than during initial phases.

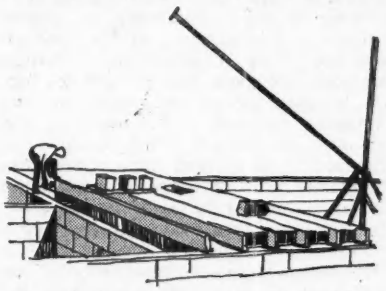


Fig. 3b. — Schleswig - Holstein. When the walls of one floor have been built up to storey height, the self-climbing crane on the right is used to lay a short section of the next floor and then climbs up in readiness for further operations.

In exceptional cases speed could be increased by 34 to 40 per cent. The interplay of vertical and horizontal phasing also made possible the most economic use of hoists.

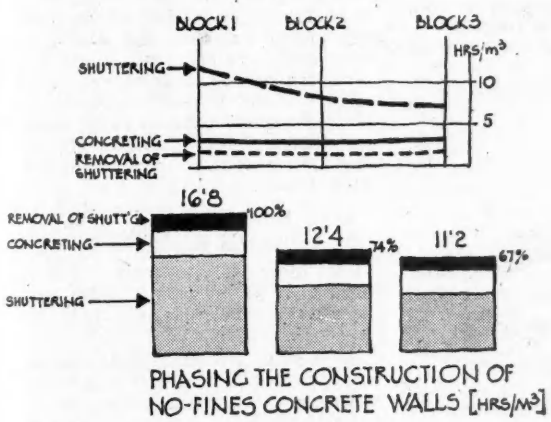
SAVINGS IN TIME

The advantages of repetitive work carried out by the same team has been proved beyond doubt. In Hanover the laying of foundations could be reduced from 10·3 hrs./m³ to 7·15 hrs./m³, i.e., by 30 per cent., after three-fold repetition; when repeated seven times the saving was as much as 50 per cent. Time for basement walls could be reduced by 30 per cent. after three-fold repetition. On a Hamburg housing estate, the erection of storey-high prefabricated wall units was speeded up to 38 per cent. by the time the seventh block had been reached. On a Munich estate, where the same wall units were used, the improvement was 39 per cent. when the ninth block had been completed. On a Hanover housing estate the concrete walls for the first block were completed in 16·81 hrs./m³ and 11·2 hrs./m³, for the third block, a reduction of 32·5 per cent. (Fig. 4).

The phasing of the construction of reinforced concrete floors in various towns achieved a 40 per cent. saving after three-fold repetition in one instance, in another case a 25-30 per cent. saving after four-fold repetition and in a third case a 45 per cent. saving after six-fold repetition (Fig. 4a).

The measure of improvement much depends on the type of work involved. Generally, it has been found that operations involving a large degree of skilled labour are most suitable for reductions in time. During one test case the time required for shuttering concrete walls could be reduced by 41 per cent., but the time for concreting the walls only by 6 per cent.; the time required for shuttering floors could be reduced by 65 per cent., but concreting only by 8 per cent.

A change in methods of construction whilst a scheme is in progress has adverse affects, e.g., a team had to lay six floors of identical size ; the first three of which were constructed in reinforced concrete.



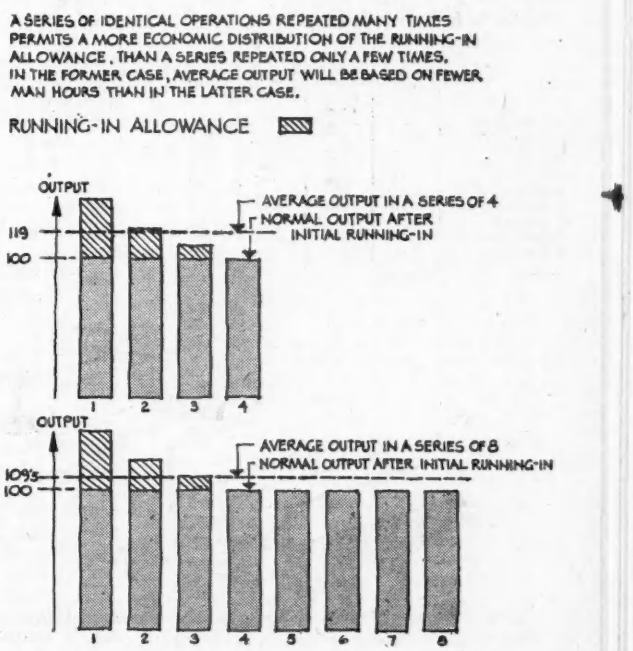
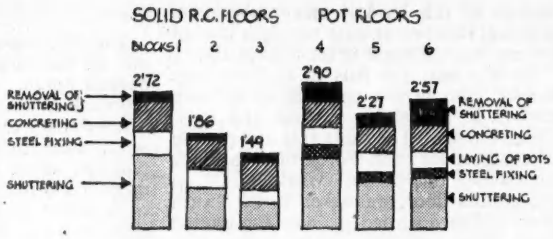


Fig. 4.—(above) shows the saving in time achieved by phasing the construction of concrete walls, expressed in hours and minutes. Fig. 4a.—(right) shows the influence of phasing on average output in the construction of reinforced concrete floors.

From first to third floor man hours could be reduced by 40 per cent. The construction of the last three floors consisted of pre-cast reinforced concrete joists with pots. Time required for the fourth floor immediately rose to the time required for the first floor tapering off again as the last two floors were laid (Fig. 5).



PHASING THE CONSTRUCTION OF 6 FLOORS. [HRS/M³]

FIG. 5

The disruption of a team through changes in personnel also hampers progress. A housing estate in the course of erection was divided into two sections, one containing twice as many dwellings as the other. When operations were well advanced the team engaged on the larger section was reorganised, whilst the team for the smaller section remained unchanged. Here productivity increased to a greater extent than with the larger team (30 per cent. for brickwork at ground floor level and 14 per cent. for work at first floor level).

It has been mentioned previously that phasing can be organised in a vertical direction. Each storey is taken as the unit for one phase; multi-storey buildings with repetitive plan at all levels are therefore most suitable (Fig. 6).

When five five-storey blocks with reinforced concrete floors and walls were erected, the following increases in productivity could be achieved:

	hrs./m³	Percentage
Ground floor	5·04	100
First floor	5·01	99·4
Second floor	4·95	98·0
Third floor	4·64	92·3
Fourth floor	3·75	74·5

Such constant reductions cannot be always maintained with vertical phasing; when a nine-storey building with reinforced concrete frame was built, progress could be maintained with some operations, but was eventually lost with others:

	Shuttering	Placing of reinforcement	Placing of concrete	Total
Ground floor	11·82	5·52	4·06	21·6
First floor	10·88	5·32	2·50	20·0
Second floor	13·02	3·20	3·98	20·3
Third floor	9·52	3·60	3·88	17·0
Fourth floor	9·44	3·70	4·06	17·2
Fifth floor	9·40	3·88	3·72	17·0
Sixth floor	10·10	3·98	3·27	17·8
Seventh floor	10·70	3·68	4·22	18·6
Eighth floor	12·00	3·92	4·68	20·6

Reduced productivity towards the end of the series may result from the removal and cleansing of equipment (e.g., steel shuttering), from the premature withdrawal of some operatives and from more difficult working conditions at greater heights. Furthermore, in the case of concrete frame construction, structural members are more slender near the top, i.e., less materials are used, whilst transport distances increase. If, however, the quantity of concrete used remains unchanged in all storeys, improvement can be maintained. This type of construction is very suitable for the use of *sliding shuttering* which has been used successfully on a 14-storey block in Hamburg, on two- to eight-storey blocks in Brunswick, and on numerous television relay towers in various parts of Western Germany. Sliding shuttering can be used in one continuous operation. It requires a large platform occupying the space within external walls (floors are placed afterwards). The shuttering and platform slide upwards by means of an hydraulic pump operated by one man. The Brunswick scheme had 16 cm. (6¼ in.) reinforced concrete walls with an external permanent shuttering of 3 in. Y-tongue insulating blocks.

The first block was erected in three vertical stages. An average of 3.47 hours was needed to complete one /m² of wall. This could be subdivided as follows:

	hrs/m²
(1) Preparation of shuttering	0.29
(2) Installation of sliding shuttering	0.36
(3) Placing of Y-tongue-blocks and reinforcements, laying of concrete	2.35
(4) Removal of shuttering	0.47
Total	3.47

During the second stage of the second eight-storey block, experience brought about increased productivity for all the above items:

	hrs/m²
(1) Preparation of shuttering	0.22
(2) Installation of sliding shuttering	0.27
(3) Placing of Y-tongue-blocks and reinforcements, laying of concrete	1.76
(4) Removal of shuttering	0.21
Total	2.46

Although these times are very favourable allowance must be made for the placing of floors after the completion of walls, and this introduces an additional and substantial time factor.

(to be continued)

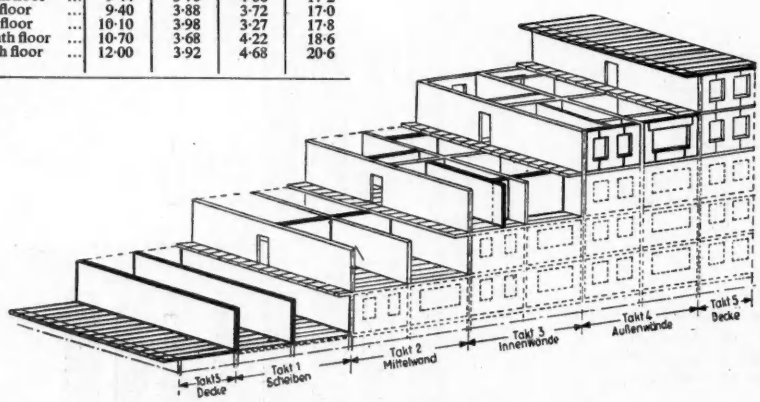


Fig. 6.—Phasing of multi-storey load-bearing cross wall structures in Eastern Germany. Phase 1: cross walls. Phase 2: spine walls. Phase 3: internal partitions. Phase 4: external walls. Phase 5: floors.

TOWN AND COUNTRY PLANNING ACTS

In the author's preface * it is suggested that the function of a book relating to a new Act which is produced soon after the Act becomes law is to provide some guidance quickly. This book, which is principally concerned with the Town Planning Acts of 1953 and 1954, but which inevitably relates them to earlier legislation, will be a useful reference on the new Acts. It is nicely produced and in addition to the usual table of cases and adequate index, contains a glossary of statutory forms in which those special planning terms or "jargon" are related to their place in the text and explained. In view of the importance of such terms as "unexpended balance of established development value" and "area of a claim holding" and others, this will be useful for reference purposes.

The main part of the book comprises a general commentary consisting of 20 pages and the text of the Town and Country Planning Act 1953 and the Town and Country Planning Act 1954, together with the text of the 3rd Schedule to the Town and Country Planning Act 1947 as amended by the Act of 1954. It also includes regulations made to date including those dealing with compensation and minerals.

The commentary consists of a useful summary of the Act and the detailed provisions contained in the six parts, although it presupposes some knowledge. The annotations to the sections are of varying length and usefulness.

R. P. C.

BOOKS RECEIVED

THE MODERN SIGNWRITER. 3rd Ed. Edited by W. G. Sutherland. (Manchester: The Sutherland Publishing Co., Ltd.) Price 12s. 6d.

MECHANICAL AND ELECTRICAL EQUIPMENT FOR BUILDINGS. By Gay, Fawcett and McGuinness. (London: Chapman and Hall.) Price 68s.

THE FUTURE OF ARCHITECTURE. By Frank Lloyd Wright. (London: The Architectural Press.) Price 50s.

SURVEY OF LONDON. Vol. XXV.—ST. GEORGE'S FIELDS. (London: London County Council.) Price 40s.

*THE TOWN AND COUNTRY PLANNING ACT, 1954, AND THE TOWN AND COUNTRY PLANNING ACT, 1953. By Derek Walker Smith, QC, and Lewis Sturge, Barristers-at-Law, in collaboration with Alistair Dawson, Barrister-at-Law. Pp. 222 (Eyre and Spottiswoode). Price 40s.

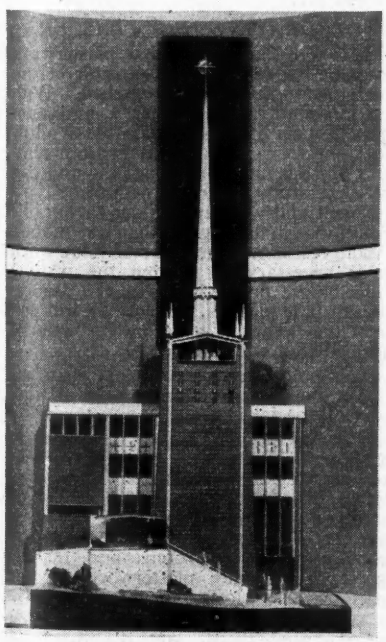
TOWN PLANNING DECISIONS

Bournemouth Church: Minister Allows Appeal

"IT looks exactly like a meat factory with a spire," was one of the views expressed at a recent public inquiry into an appeal by the trustees of the Punshon Memorial Methodist Church against the refusal of Bournemouth Town Council to allow them to build a church on a site in Exeter-road, Bournemouth. The council's refusal was based on the ground that a building of traditional design should be erected on the site.

The inspector was informed during the course of the hearing that in view of local opposition and traffic problems in Exeter-road the council would request the Minister to exercise his powers under the Town and Country Planning Act and to consider the whole scheme and decide whether the site was suitable for a church at all.

Dr. Thomas Sharp, CBE, LRIBA, a past-president of the Town Planning Institute, and of the Institute of Landscape Architects, said the council's ground of refusal would seem to be capricious, vague and unreasonable. The council were unable to give a definition of what constituted a traditional design, except that it was something opposed to a modern concept. The words "traditional design" were meaningless in the context of Bournemouth. Architecturally the town was a complete hotch-potch and the hotch-potch was about as confused as it could be in the locality where it was proposed to build this church. The council had no right to enforce a neo-Gothic, or indeed any style associated with so-called church architecture, on a Methodist denomination.



METHODIST CHURCH, BOURNEMOUTH. The design by Mr. R. H. Sims, AA Dip., ARIBA (Frederick Lawrence and Partners), which is the subject of the successful appeal reported above. From a model.

A secretary of the department for chapel affairs of the Methodist Church said that after the war it was decided to try to build churches rather more in line with the modern idiom. It was considered that the elevation of the proposed church was striking and would be interesting and intriguing so far as Methodists were concerned.

On behalf of the council a witness, asked to give his personal opinion of the proposed building, said: "I would say it looks more like a factory, when you take the spire off, than a church. In an architectural journal there recently appeared a picture of a meat factory, and I have taken the liberty of drawing a spire on it. It looks exactly like the building in the scheme submitted today."

Asked to give his opinion of what was meant by the term traditional church design, the witness said: "Well, something that looks like a church."

The Minister has now considered the representations made at the inquiry and has decided to allow the appeal. In the course of his decision he states that the effect of a church on road traffic does not justify refusal of permission, and he has therefore dealt with the case as one raising a purely architectural issue. On this he has come to the conclusion that the building has been well and honestly designed in the modern idiom, and he does not consider that this departure from traditional design will affect the amenities of the immediate neighbourhood or of the central area of Bournemouth. He feels justified, therefore, in allowing the appeal and hereby grants permission for the erection of the church . . . in accordance with the plans submitted.

Croydon's "Little Piece of Devon" to be Developed

THE Minister of Housing and Local Government has, on appeal, reversed the decision of the Croydon Corporation that some 65 acres of farmland on the Ballards Estate at Addington should remain an open space and has informed the owners—the Royal Warehousemen Clerks' and Drapers' Schools—that the land may be developed. It is understood that a firm of builders want to buy the land for the purpose of erecting between 300 and 350 houses on it.

At the public inquiry into the owners' appeal against the council's refusal, considerable opposition against the proposed development was forthcoming from residents in the vicinity, who protested against the intention of building on what they regarded as the last beauty spot in South London and Croydon's "little piece of Devon."

BIRKENHEAD BUILDING

Alderman's Criticism

SPEAKING at Birkenhead Corporation budget meeting recently, ALD. C. J. YATES criticised the Borough's Works and Buildings Department. The department, he said started in "a potting shed," and next year they were budgeting for an expenditure of nearly £¼m. "It is in danger of becoming a Frankenstein," he added, and there was no way of checking its costs and estimates.

It was reported during the meeting that the balance in the Housing Repairs Fund had fallen from £138,000 to £72,000, and there was now only sufficient money in the fund for one year's repairs and maintenance.

INTERNAL DECORATING

Advice Given by the LMBA Technical Information Service

ASSISTING members of the Association in finding solutions to technical problems encountered in their day-to-day work is one of the functions of the LMBA Technical Information Service, which is provided in collaboration with the Ministry of Works. Many of the inquiries dealt with are therefore specifically related to particular problems. Some, however, call for information of more general interest and a selection of such inquiries is reviewed in bulletins which are circulated to all members. Following is the text of a recent bulletin, No. 7 in the series, which deals with the problems of internal decorating:—

It is reported in the United States that three-quarters of the paint and two-thirds of the wallpaper sold are applied by amateurs and it would appear likely that a similar trend is developing in this country, as part of the ever-changing pattern of industry. The provision of new materials, such as paints that "flow-out" without brush marks, new appliances that enable a tolerable job to be given by an unskilled worker, and new adhesives that simplify paperhanging, has hastened the trend. Inquiries concerned with internal decorating, nevertheless, have been more numerous than those relating to any other subject. This clearly indicates that builders and decorators are fully alive to the situation and appreciate that, unless it is faced by positive action, much more of its traditional work may be lost to the industry.

In the ordinary run of domestic work the main inducements that the maintenance builder can offer are quicker work and better quality. He can never be cheaper than the householder, the window cleaner or the chimney sweep, but speed and cleanliness mean much to the average housewife and often outweigh the extra cost of having the work efficiently carried through by the maintenance builder. In those commercial and industrial organisations where competition comes from a directly employed staff of handymen the only inducement that can be held out by the maintenance builder must generally be a saving in cost.

PAINTING BY ROLLER

Besides the free services provided by the interior decorating departments of paint and wallpaper manufacturers for advice on decorative schemes and similar matters there are a number of other aids available to the painting contractor and maintenance builder in achieving cheaper, speedier and cleaner work. Apart from the spray gun, which has only a very limited application so far as much internal decorating is concerned, there are paint rollers, mechanical sanders and wire brushes, paint washing machines, steam wallpaper strippers, electric and gas paint strippers, wallpaper pasting machines, mechanical floor scrubbers and polishers. How many of these aids does he use? How many has he investigated or used experimentally?

One inquiry called for information on the comparative costs of applying paint by

roller and by brush on large surfaces such as walls and ceilings.

There is so far very little authoritative data on which to base an answer, but tests have been carried out which have given interesting but not yet conclusive results.

Some experiments are being made with rollers that are fed with paint from a small container which is an integral part of the equipment and with rollers that are power-fed with paint from a pressure tank through a hose, but the two main types of rollers that have been successfully developed are both similarly charged by taking up the paint from a tray with sloping bottom which is partly filled with paint. The paint is held in the deep end of the tray and the slope is used for distributing the paint evenly around the roller; practical observation seems to show that this is a satisfactory method of charging the roller, but the tray must be kept on an even keel because it is shallow. It is, however, an awkward method to use on scaffolding or steps unless a special platform is provided to carry the tray and charging the roller is slower than charging a brush.

The decorator has the choice of a mohair-covered roller or a lambswool-covered roller and tests seem to indicate that both types are equally suitable for applying gloss paints, undercoatings, flat oil paints, water paints and emulsion paints. The mohair-covered roller is perhaps the better for use on most interior surfaces, as it leaves the surface with a fine granular texture which is much more pleasing than the brush marks sometimes seen in conventional work; with some heavily bodied gloss paints, however, the texture becomes so marked as to give an orange peel appearance with a resultant loss of gloss. Where the surface to be painted is rough and irregular as with concrete or fair face brickwork the lambswool-covered roller may be preferred because its softness permits the paint to be pushed into the low spots and holes. Floor finishing is a greatly simplified job if a roller can be used. With a long extension handle the roller is an excellent tool for putting on floor varnishes, stains and paints. It can be used for applying surface hardening treatments on concrete floors; it may also be practicable to decorate ceilings from floor level when the roller is fitted with a long extension handle.

The application of paint by roller on walls and ceilings seems both quick and clean with very little spotting, although with some thin materials a fine spray may be given off if the roller is too heavily charged or is used too energetically. None of the rollers at present available will cut into a sharp edge or are suitable for moulded faces. Consequently it is still necessary to use a small brush such as a 1-in. sash tool to go round edges even if a roller is used on the major flat areas to be painted. For good results the material being applied should be crossed in the same way as cross brushing is done. It is not necessary on walls for instance to roll vertically and then horizontally; any movement can be used so long as the material is sufficiently cross rolled to ensure complete covering and a solid even continuous paint film. In practice the technique is quite simple although the film thickness is not so easy to control as with a brush and therefore films may be applied too thickly.

The maintenance of the roller must be carried out with more respect than is often shown to a brush. Cleaning after use is very important, but it is simply done by washing the roller under a tap with soap and water if aqueous materials have been used; after oil-bound materials have been used cleaning is done by soaking with white spirit, rolling on newspaper and finishing with a wash in soap and water.

Investigations into the comparative production of brush and roller are still continuing, but it seems clear from the work already done that the paint roller is not just a gadget for the amateur. It appears to be a useful item of painters' equipment and in time it may supplant a large portion of present-day brushwork. These investigations tend to show that over the full range of painting materials the roller paint coverage per gallon is equivalent to that of brush application, whilst with some types of paint it is probably greater. So far as time in application is concerned, some trials on uninterrupted corridor walls and ceilings have also shown that application by roller took substantially less than half the time required for brush application.

There are, of course, very many factors that have bearing on both time and coverage, but the present indications are that there can be few internal decorating jobs of a reasonable size where the overall saving by using a roller for wall and ceiling painting does not approach 10 per cent. of the total cost of the work and in some cases this saving could rise to 25 per cent. The introduction of the paint roller, however, does not mean that the 4-in. brush no longer does the job it was designed to do; it simply indicates an alternative method of applying paint to flat surfaces with a considerable saving in time.

RESPONSIBILITY FOR FAILURE

Modern paint technology has placed at the disposal of builders an entirely new range of materials with many advantages that the older "home-made" paints, based on raw linseed oil or natural gum varnishes, did not possess. Finishes can now be obtained for extremely severe conditions such as exposure to concentrated acid fumes and caustic alkalis or constant immersion in water, but against this gain must be offset one disadvantage. The painter seldom knows the composition of the material he is applying.

Some years ago when ready-mixed paint was prepared according to traditional formulae, it was possible, for one reason or another, to use A's undercoat with B's finishing coat without risk of trouble. To-day paint manufacturers compound their products to suit the coatings that precede and follow them. If A's finishing is used, A's undercoat and A's primer must also be used. To disregard this rule may involve the builder in serious loss and only one example need be given to stress its importance.

In a new block of flats it was specified that the joinery was to be painted with undercoating and finishing supplied by a designated manufacturer. After a few months some of the paint started to peel and when this was reported to the paint manufacturer he inquired about the primer. On learning that the joinery manufacturers had used their own particular brand of primer, the paint manufacturer, who had only supplied the material for the undercoating and finishing coat, disclaimed any responsibility for the failure and refused to contribute towards the cost of repainting.

This example is sufficient to show how trouble can so easily develop from routine procedure in ordering joinery to be delivered primed without relating the type of priming paint to the ultimate finishing paint.

It is always well worth while seeking the advice of the paint manufacturer when any condition a little out of the ordinary is encountered. It is an insurance against trouble and loss because the responsibility for recommending a suitable painting system is then placed with the manufacturer, who has paint technologists to guide him, instead of being shouldered by the builder, who knows little or nothing of the composition of the paint or its limitations. If the builder has trouble with paint which he has selected without consulting the manufacturer, it is rare for the manufacturer to do more than offer a fresh supply of material and this concession is usually obtained only after prolonged negotiation. Even this offer may not be made if cheap low-grade materials have been used. In trade literature such wording as "competitive in price" or "estate brand" or "suitable for maintenance work" conveys a warning that the materials are not of the best. It should be remembered that materials account for about one-fifth of the total cost of decorating work and that even a large saving on them does not amount to a very significant saving on the final cost of the job.

DECORATING NEW PLASTER

It is well known that new plasterwork must be left to dry out if possible before permanent decoration is applied. With predominantly lime plaster a minimum period of six months is advisable to allow the lime to carbonate, but gypsum plasters dry out much more quickly and can be successfully decorated with some types of paint and wallpaper under favourable conditions in usually less than one month. Alkali resistant primers are of value when it is necessary to shorten the waiting time before proceeding with the decoration of lime plasters, but nothing will prevent the failure of a decorative material applied to a wet surface.

It is not always obvious that a surface is wet and in this connection one inquiry was of special interest.

The first floor of business premises in a shopping centre was adapted from its original use as a stockroom to provide living accommodation under the same roof. This involved fixing factory-made gypsum plaster panels of storey height as partitions between rooms and making good the existing plasterwork on the party walls enclosing the premises.

Wallpaper was used for the decoration of the party walls and the partitions generally, but some partitions were papered on one side only, whilst the other side was finished in distemper. Within a few weeks all the partitions that had been papered became discoloured and affected by mould growth and this was

especially serious where they were papered on both sides. This condition was present over the whole of the papered surface, with the exception of a narrow band about 2 in. wide just above the wood skirting and around the architraves to the doors, where the paper was discoloured but no disfiguring growth had developed. The old party walls, although extensively patched with new plaster, were unaffected in either way.

It was obvious from these conditions that the new plaster partitions had contained a large amount of water at the time when they were decorated but that the wood skirtings and architraves had absorbed sufficient of the moisture to dry out the immediately adjacent plaster.

To hang paper on the wet plaster was to invite serious trouble, but the builder had assumed that the factory-made units would be dry on delivery, as indeed they should have been, and had proceeded to decorate them soon after they had been fixed.

The species of mould growth found on the paper left no doubt that the spores obtained their nutriment from the paste or size used in hanging the wallpaper and that the right conditions existed in the form of moisture for airborne spores to germinate and flourish.

In order to put the work right and avoid any recurrence of the trouble it would be necessary for the whole of the wallpaper to be stripped and burned. The walls would then have to be washed with water, sterilised with an antiseptic wash and allowed to dry; if, after a week, there were no sign of new growth, the walls would be ready for repapering. As an additional precaution a small quantity of the antiseptic could be mixed with the size and the paperhangers' paste when redecorating. "Hepta-San," "Santobrite," and "Shirlan N.A." are among the preparations available on the market for making up antiseptic washes for dealing with mould growths of this kind.

DECORATING WITH SAFETY ON NEW PLASTER

Decorating new plasterwork containing too much moisture is responsible for many failures with all types of finishes. Sometimes the decorative materials used are unjustly blamed. No finish can be invariably successful on new work that is not reasonably dry, and although distemper and the non-glossy emulsion paints are porous and allow the work to dry out, bleaching or powdering may still occur if alkaline salts are present in the wall.

Although timber can safely be painted when it has a moisture content of 15 per cent. or 20 per cent., it is unwise to apply an impervious paint or hang paper on plaster holding more than about one per cent. of moisture. For a long time there has been a need of a method for ascertaining when walls are sufficiently dry to decorate with safety and an instrument is now available on the market that takes all the guesswork out of the answer. It costs less than £6 and is merely placed in position against the wall at the end of the day and left there overnight; a dial reading is taken the following morning. This moisture meter can also be used in the same way to determine when solid concrete floors and screeds are sufficiently dry to allow the application of the floor finish.

HANGING WALLPAPER ON WALLS PREVIOUSLY PLASTIC PAINTED

An inquiry has been received about hanging wallpaper on walls previously treated with plastic paint applied with a heavily textured finish. There is no doubt that the main problem involved is the preparation of the wall surface which may entail a great deal of work and is likely to be fairly costly. Once these compositions are on the wall it can be very troublesome to change to another style of decoration.

One treatment sometimes recommended is to apply a fresh layer of plastic paint floated with a trowel to a level surface, but even if this is practical it is more than doubtful whether it would provide a satisfactory ground for wallpaper. There is generally no alternative to removing the plastic. There are two distinct plastic compositions of this type and the method of removal will depend on whether the original composition was prepared with an oil base or was one of the casein-bound distempers or whiting types of material.

The latter type is the easier to deal with, as it is sensitive to water, and therefore the most likely means of removing it will be a steam stripping apparatus. The existing plastic coating may, however, have been finished in paint which would prevent the steam from penetrating the plastic composition and, if so, it would first be necessary to break down the decorative finish. This can be done by means of an abrasive, and fairly coarse steel wool suggests itself as the best medium for dealing with the irregular contours of the surface.

Where the original treatment has been carried out with one of the oil-based compositions the steam stripping method will not be suitable and it will be necessary to burn off or to use a good paint remover. Burning off is perhaps the quickest and most economical method either with a blow lamp or an electric paint scraper operated from the mains supply. If one of the organic paint removers is used a fairly substantial application may be necessary to soften the thick paint coating. Whichever method is adopted, a great deal of mess will be made and all easily removed articles of furniture and fittings are best taken away before the operation begins; other surfaces should be sheeted up and the floor carefully protected with dust sheets or stout paper. After making good any cracks in the plaster, it will probably be advisable to size and line the walls before hanging the wallpaper.

STAINS ON PLASTER

Many inquiries have been received on the treatment of stained and discoloured plaster affected by corrosion of the heads of ungalvanised nails used in fixing plaster-board ceilings or by penetration through to the plaster of condensed moisture from a chimney flue.

For the former the best course is to seal back the stains with shellac or knotting or aluminium paint. A similar method is likely to be successful where the tar-like stains from a flue are not severe. If, however, staining from this cause is pronounced a higher degree of security against damage to subsequent decorations may be obtained by applying to the plaster a layer of aluminium foil fixed with an adhesive made up with red lead and gold size to a creamy paste; this should be followed by lining paper more than covering the aluminium foil, with an inch or so turned up all round so that when the paste is dry this rim can be torn off to a feather edge.

DECORATION OF FARM MILK ROOM

A surprisingly large proportion of inquiries on matters of internal decoration have been concerned with other than domestic or commercial buildings and the two following examples, both of which contain points of general interest, are taken from a miscellaneous group of inquiries relating to the internal decoration of buildings of other classes.

In one case information was requested on a suitable treatment for the walls of a milk room used for the cooling, handling and storage of milk on a farm. The existing walls were built of precast concrete blocks and it was now desired to finish them with a decorative treatment. As the surfaces were liable to be splashed with milk, they should be smooth and impervious to milk acids; they should also be capable of withstanding impact and abrasion from churns and trolleys. It was considered that the most suitable material for finishing the walls would be glazed tiles bedded solidly to the concrete blocks and carried up to such height as might be necessary to catch milk spillage, but the inquirer was seeking a less costly treatment. A cheaper finish in the form of a smooth cement rendering around the walls to dado height was considered satisfactory with a decorative paint coating both on the new rendering and on the exposed concrete blocks above.

The most easily washable materials are those with a gloss. High-gloss paints based on alkyds and synthetic resins may be applied to a reasonably smooth surface such as rendering, but they are sensitive to alkali and should only be applied after the wall has dried out and received two coats of alkali-resistant primer. Chlorinated rubber paint has the advantage that it can be applied to cement rendering without a special priming coat and it was therefore considered to be the most suitable type of paint to be used for the milk room.

Above the level of the rendering and in other places where there is little danger of spillage of milk the paint finish need not necessarily be impervious to liquids, but it must offer no risk of mould growth; whitewash and distemper are unsuitable because of their tendency to flake. If a cheaper finish is required on the exposed concrete blocks above the rendering, a cement paint, although not easily cleaned because of its roughness, is perhaps the best alternative to chlorinated rubber paint.

DECORATION OF SQUASH RACKETS COURT

The subject of another inquiry was for advice on the best type of decorative material for the walls of a squash rackets court originally finished in a semi-gloss paint which was flaking in parts and badly disfigured by black marks from the balls used in the game. In choosing a finish for this job it is necessary to take into consideration not only the appearance and durability of the paint but also its possible effect on the game. Too thick a coating might slow down the pace appreciably, whilst an impervious coating might pro-

mote the deposition of condensed moisture. For these reasons the walls of a squash court are often left unpainted, although it is not easy to keep the unpainted surfaces clean.

The inquirer had suggested that plastic emulsion paint might be used, but, whilst this is probably the best type of material for a new court, it was not considered suitable for use on walls already treated with paint.

Because there is frequently a good deal of condensation in squash courts there is the same objection to the use of a plastic emulsion paint as there is to using it over the previously painted walls of a bathroom, kitchen or any other interior subject to condensation. The emulsion paint absorbs moisture which, however, comes up against a barrier provided by the old paint and the subsequent swelling and shrinkage of the emulsion paint will, sooner or later, lead to failure.

In the circumstances there seemed to be no alternative to the use of a semi-gloss paint, although it may not be considered an ideal form of treatment. Only if the existing coating was stripped could the use of a plastic emulsion paint be recommended.

All inquiries about the LMBA's Technical Information Service should be addressed to the London Master Builders' Association, 47, Bedford-square, London, WC1. (Tel.: Museum 3891-5.)

IN PARLIAMENT

The Adjournment

PARLIAMENT adjourned for the Easter recess on April 7, saddened by the resignation of Sir Winston Churchill as Prime Minister, but enlivened by the prospect of an early general election. The departure of Sir Winston from his high office will not mean his passing from the political scene, for he intends to continue as a back bencher, and, indeed, the forthcoming venture at the hustings will find him as vigorous and determined as ever.

Sir Anthony Eden, his successor, made a brief appearance in the House on April 6, the day of his promotion, and together with Mr. Attlee, leader of the Opposition, and other Members, paid tribute to his former chief and political colleague for more than 30 years. No immediate reshuffle of the Government was announced, but it was confidently expected that Mr. Harold Macmillan, whose magnificent work as Minister of Housing and Local Government for two years did much to make the Government's building programme an outstanding success, would go to the Foreign Office in succession to Sir Anthony. This appointment was subsequently confirmed from 10, Downing-street.

HYDE PARK CORNER

MR. LANGFORD-HOLT, on March 30, asked the Minister of Transport and Civil Aviation whether he had any further statement to make on proposed alterations to Hyde Park Corner.

MR. BOYD-CARPENTER: Not yet.

MR. LANGFORD-HOLT asked if the Minister could say when this alteration would be carried out.

MR. BOYD-CARPENTER said that Mr. Langford-Holt might have seen that certain proposals were before the Royal Fine Art Commission.

BANKSIDE POWER STATION

On April 6, MR. GEORGE ISAACS drew attention to what he described as an "insufferable nuisance" being caused to the people in that part of his constituency where the Bankside power station was situated. The area was partly demolished and a stretch on the river front had been set apart by the Southwark Borough Council and the London County Council as riverside pleasure gardens. There had been mixed feelings when it was announced that the new modern power station was to be erected, but the disappointment was lessened by the fact that this station would do away with the nuisance of the old station. For some time there had been complaints about the intolerable amounts of grit which fell in the area. When the new station was contemplated there had been much fuss because it was stated that its smoke would damage St. Paul's Cathedral: there had been far more fuss about danger to the cathedral than to the health and comfort of the people.

In September, 1950, while the old plant was in full operation deposits from it were being measured in two places—on Bankside under the station, and on Southwark town hall a mile away. Recordings showed a deposit equivalent to 235 tons to one square mile at Bankside and 60 tons at the other centre. In 1951 it had dropped to 172 tons and in 1952 was 192 tons. The local authority examined these recordings and found the deposits were in excess of those of nearly all the industrial centres in the country. There had been ups and downs in the figures. In February, 1953, they were equivalent at Bankside to 268 tons to one square mile, but in July declined to 62 tons. In July, 1954, the deposit was higher than in October or December.

The dirt was so noticeable that it could be felt under foot. What, Mr. Isaacs inquired, was it like in the atmosphere; what were its effects on food and houses? The staff at the station had done everything they could to put the matter right, but he did not think the Central Electricity Authority had done as much as they could. Half of the old, obsolete station, burning huge quantities of coal had to be kept in operation because of the needs of the country for electricity. One had to be in the area to appreciate the nuisance. There was grit in the eyes, grit under the feet, grit which blackened buildings within 100 to 150 yds. of the station.

MR. WILLIAM DEEDES, Parliamentary Secretary, Ministry of Housing and Local Government, said there were two stations involved in this question—the old station and the new. Mr. Isaacs was not complaining about the new one. The old station was completely out of date, nearing the end of its life, and it was expected that if in five or seven years it was not dismantled it would only be used in an emergency. There had been a progressive reduction in the amounts of coal and oil burned since 1950. Of the 18 boilers only two were fitted with grit arresters, and the CEA were reluctant to carry out the re-equipment of plant with a limited life. It had been found that the boilers, both oil and coal fired, were likely to produce dark smoke for two minutes when brought on load. There was a conflict between the observations of the chief inspectors and the readings of the Southwark borough gauges about the quantities of sulphur dioxide: the gauges showed an increase in 1954 compared with 1953. One deduction was that some must come from other sources. The station was closed during July and August, 1954, but the readings of the Bankside instrument showed appreciable amounts of sulphur dioxide, and it was difficult to check the source of the emission.

It was the opinion of the chief alkaline inspector that the station was responsible for the grit deposits. Winds from the south and west tended to bring waste gases from the "A" station down to ground level rapidly and that might account for the exceedingly high readings. Two gauges placed in close proximity would give repeatedly high readings, but the estimate they indicated of an actual fall in tons to a square mile could be fallacious. The Ministry accepted the report of the inspector that the matter was unsatisfactory. They had discussed it with the CEA. He did not wish to imply that the last word had been said about the subject, but could only give the assurance that in the short-term course open to the Authority all that the Ministry could seek to do was to keep urging a close control on smoke and a further reduction in the use of solid fuel.

SCHOOL STEELWORK TENDERS

MR. J. P. W. MALLALIEU asked the Minister of Education whether he was aware that of 11 tenders for the construction of the Deighton Secondary Modern School, Huddersfield, 10 were identical and one was slightly higher, and whether he would obtain a full report before approving the final acceptance of the tender.

SIR DAVID ECCLES, replying on April 7, said: "The tenders were for the supply and erection of the structural steelwork, and not for the school as a whole. I understand that the local education authority are considering whether any of them should be accepted."

MR. MALLALIEU asked if the Minister had had reports of similar occurrences from other parts of the country and, if so, whether it would not be worth while referring this section of the industry to the Monopolies Commission.

SIR DAVID ECCLES said that he had had such reports when he was at the Ministry of Works, and he would certainly speak to the Minister about this matter.

MR. KING asked if the Minister kept a check on the firms who were supplying what were almost monopoly constructions to the various school-building programmes.

SIR DAVID ECCLES: I think the firms supplying structural steelwork are well known.

SIR FERGUS GRAHAM asked the Minister of Education what plans were now in progress for technical education for the county of Durham.

SIR DAVID ECCLES, in a written reply on April 7: The local education authorities within the county of Durham have in hand, or expect to start before next April, seven technical college building projects. I am considering a further eight for starting in 1956-57.

Air-Conditioning in Hot Climates

By RAGLAN SQUIRE, FRIBA

THE FOLLOWING ARTICLE, which describes the main types of air-conditioning equipment available and the design requirements of buildings in which the air temperature and humidity are to be regulated by this means, was originally prepared by the author with special reference to the climatic conditions of Iraq. Mr. Squire's broad approach to his subject, however, renders the article of interest not only to those whose problem is to keep buildings cool in a hot climate, but to all concerned with air-conditioning, whatever the particular problems of climate and temperature regulation with which they may be faced. The author places special emphasis on the importance of the decision whether or not to install air-conditioning being taken before the architect commences with the preparation of even the preliminary plans for the building.

AIR-CONDITIONING can be described briefly as being the maintenance of temperature and humidity at a desired level within a given space with the correct proportion of fresh, clean air provided for adequate ventilation, irrespective of the external air conditions. The subject is, therefore, vast, embracing all aspects of heating, cooling, ventilation, humidification and the drying and filtration of air.

To understand the basic principles an understanding must be obtained of each of the above factors. A complete air-conditioning plant would incorporate all these facilities but in practice only very few climates warrant the inclusion of all. For instance, there are only very few places which are both very hot and very cold, very dry and very humid, and the popular conception of air-conditioning nowadays applies to the cooling and dehumidification or humidification of air.

CLIMATIC CONDITIONS

Before selecting or designing an air-conditioning plant, the first task is to establish accurately and correctly, the climatic conditions likely to be experienced at the site of the building to be air-conditioned. From this data, the basic requirements can be set down, i.e., whether heating or cooling or both is required; whether drying and humidification of the air is required, and whether accurate filtration of air is necessary or not. The next step is to study the building construction and assess accurately the amount of heat which will be transferred by conduction, convection and radiation from inside the building to the outside or from the outside to the inside according to the external and internal climatic conditions. Allowance must be made for the amount of fresh air which would be required within the conditioned space to ensure adequate ventilation for the occupants and an assessment must be made of the amount of moisture which must be added to air extracted from the building to maintain the relative humidity at the desired level.

These calculations are made in terms of British Thermal Units to be added or extracted per hour in relation to the dry bulb and wet bulb temperature. The final calculations will be the result of many smaller calculations based upon the individual features of the building. Once having established the heating and cooling requirements consideration can then be given to the selection of plant to suit these conditions.

THE REFRIGERATION CIRCUIT

However, before going on to an analysis of the various types of plant, a brief description of how a refrigeration circuit works might not be amiss.

The science of refrigeration is based upon the fact that liquid can be vapourised at any desired temperature by changing the pressure above it. Comparatively large quantities of heat are absorbed when liquids which boil at low temperatures are evaporated, and if they can be liquefied again at moderate pressure and temperatures they can be used as refrigerants. Refrigerants in common use today are freon, ammonia and methyl chloride. Freon is inert, non-inflammable and non-toxic and is, therefore, very safe; on the other hand it is very expensive. Ammonia is cheap, but in gaseous form it is extremely poisonous, and any escape in quantity could prove fatal.

A typical refrigeration circuit consists of the following components.

A compressor.
An evaporator.
An expansion valve.
A condenser.
A liquid recoverer.
A filter drier.

When the electric motor of the compressor is switched on, liquid refrigerant is forced by the pressure created from the liquid receiver along the pipe-line through the filter drier to the expansion valve. The filter drier ensures that no minute particles of scale or other matter can reach the expansion valve and also ensures that no possible moisture within the circuit is absorbed. Should there be any moisture in the system ice will form at the expansion valve and restrict or stop the flow of refrigerant within the circuit.

"SUPER HEAT"

The liquid refrigerant now passes through the expansion valve which regulates the rate at which the refrigerant circulates throughout the system and also creates a resistance which enables the pressure in the condenser to be maintained at the desired level. Towards the end of the evaporator coil where all the liquid has been evaporated the temperature of the vapour will rise higher than the normal evaporation point, and this temperature difference is termed super heat. Super heat is maintained at a constant value by the thermostatic control of the expansion valve. If it is too low the expansion valve will open allowing additional refrigerant to enter the evaporator. If it is too high the expansion valve will close to reduce the amount of flooding of the evaporator.

The correct quantity of liquid is thus introduced into the evaporator coil where, at a reduced pressure from its surroundings, it is vaporised. The temperature at which vaporisation takes place is governed by the pressure in the evaporator. After leaving the evaporator the vaporised refrigerant (gas) is drawn to the compressor where its pressure is raised to such a point that it can be condensed back into a liquid by cooling. This is effected in the condenser unit which is kept cooled by a cooling medium. From here the liquid flows at high pressure into the liquid receiver and the cycle is then repeated.

It will be seen that the purpose of the compressor and the condenser is to enable a small amount of refrigerant to be used over and over again. It will also be seen that in the evaporator heat is transferred to the liquid refrigerant which is dispersed to the coiling medium cooling the condenser. The cooling medium at the condenser disperses this heat to a source outside the refrigeration plant room.

The Main Components

The components of a refrigeration circuit of an air-conditioning system are basically as follows, but these are by no means exhaustive and can only serve to give an indication of some of the various alternatives available when considering an air-conditioning plant.

(1) *THE EVAPORATOR*

As the evaporator is the part that actually cools (and dehumidifies) the conditioned air, it is essentially designed to present a large cooling surface in the smallest possible space. The most practical method of doing this is to use a finned tube construction of which the plate-type fin joining a series of tubes in depth and breadth is undoubtedly the most efficient. Copper tubes are normally used and, as the finned surface is invariably wet, tinned copper fins are in popular use. Alternatively, aluminium fins can be used with tinned copper tubes. Evaporators are designed to ensure that the entering warm air is evenly cooled and the method of serpentine flow of the refrigerant through the coil has a large bearing upon the overall efficiency.

(2) *COMPRESSOR*

Various types of compressor are available, but those in common use are the open-type reciprocating and rotary compressor, and in the smaller sizes, the sealed compressor.

The open-type compressor is normally driven through a belt drive from a power unit. Many sizes are available ranging from fractional horse power models to units exceeding 200 h.p. each. In large air-conditioning installations it is com-

mon practice to use two or more medium size compressors rather than one large unit. This enables greater flexibility of control, particularly where a chilled water tank is used. It also ensures that the air-conditioning plant can continue to operate should there be a fault in any one compressor and enables one unit to be taken out of service for maintenance without interruption of the air-conditioning system.

There has been a very considerable development in the production of the sealed or hermetic compressor during recent years. The principle is that the electric motor is directly coupled to the compressor and is encased in a sealed casing. There are two types available, namely, the fully sealed compressor and the accessible sealed unit. The accessible model enables repairs to be conducted in the event of breakdown whereas the fully sealed unit must be returned to the factory for repair.

(3) *THE CONDENSER*

There are three basic types of condenser in common use:

The air-cooled condenser.
The water-cooled condenser.
The evaporative condenser.

(*a*) *The air-cooled condenser.* In basic construction the air-cooled condenser is very similar to the air-cooling evaporator. It is normally situated well away from the conditioned space with direct access from and to the fresh air. Air is blown at a considerable speed through the fans of the condenser, extracting the heat from the refrigerant. There are certain limitations to the use of the air-cooled condenser which the air-conditioning engineer must consider when designing his plant. Physical dimensions must be taken into consideration in relation to the amount of condensing which is required and in most cases it is not practical to use air-cooled condensers with compressors exceeding 5 h.p. Another important factor is the temperature of the air available for cooling purposes as this materially affects the size of the cooling plant required.

(*b*) *The water-cooled condenser.* In the water-cooled condenser, water is used to extract heat from the refrigerant. The condenser normally takes the form of a cast iron shell and internal tubes, water being circulated freely within the shell and the refrigerant within the tubes. The quantity of water required is quite considerable, approximately two gallons per minute being required for every ton of refrigerant. In most large installations this necessitates the use of an enclosed circuit incorporating a water-cooling tower to feed the condenser. It is, of course, impractical in most tropical climates to run such quantities of water to waste. Water temperature is important when selecting a suitable water-cooled condenser as in most tropical climates no really cool water is available. It is quite usual only to find water at 90 deg. to 95 deg. F. available in most tropical climates.

(*c*) *The Evaporative Condenser.*— The evaporative condenser can be described as being half way between the air-cooled condenser and the water-cooled condenser in that it incorporates features from both. The principle of the evaporative condenser is that air is blown at a considerable velocity through a series of finned tubes upon which water is sprayed. In evaporating on the tubes the water extracts the heat from the refrigerant. Ample access to fresh air is required as in the case of the air-cooled condenser and a piped water supply is also necessary. The main advantage of the evaporative condenser lies in the fact that by combining air-cooling with water-cooling the benefits of both are obtained with only a small percentage of the water requirements of the water-cooled condenser. This can, in fact, be as little as a pint per minute for a large installation.

(4) *THE AIR-FILTER*

There are many types of air-filter available. The first consideration must be the quantity of dust to be extracted from the air. It is obvious that a more efficient filter is necessary in a sandy and, consequently, dusty climate than in a comparatively dust-free area. The quantity of air to be filtered and the maintenance facilities available influence the engineer's choice. The following popular types are in common usage.

(*a*) *The throwaway type.* This filter comprises a bank of glass silk or light fabric which, as its name implies, is thrown away once it becomes clogged with dust. This type of filter is suitable only for use in climates where a small amount of dust is experienced.

(*b*) *The non-viscous filter.* This type of filter normally comprises a bank of dry metal wool—usually copper or aluminium. Its efficiency compares favourably with the throw-away type and it has the added advantage of being cleanable and hence has a long life.

(*c*) *The cloth fabric filter.* This usually comprises a heavy cloth fabric arranged in banks in a "vee" formation. It is a most efficient filter suitable for the dustiest climate. It can be cleaned quite simply by shaking or by a vacuum cleaner.

(*d*) *The viscous filter.* The basic construction of the viscous filter is similar to the non-viscous filter. The metal wool is saturated with a heavy oil. It is suitable for use in climates not experiencing too much dust and constant cleaning is necessary.

(*e*) *The self-cleaning viscous filter.* This usually comprises a series of viscous filters mounted on a chain drive, each filter being periodically cleaned by automatic immersion in an oil bath. The initial cost of such equipment is usually heavy.

(*f*) *The electro-static precipitron filter.* This is a most efficient filter used for extracting minute particles of dust from the air stream. Its efficiency is such that particles down to microns can be extracted. It operates on the principle of the dust being charged with electro-static charge causing it to impinge on an electro-static plate. The initial cost of such a plant is very heavy.

Types of Installation

Having outlined the basic elements from which a modern air-conditioning plant is built up, we can now proceed to a description of the various types of installation that are in common use today. The selection of any particular type will depend on the answers to many questions such as: how much local control is required in each room of a building? is there room for duct-work? is there space for a plant-room? can water be obtained for cooling? what is the maximum electrical load available? and many other questions.

Air-conditioning installations fall broadly into three categories:—

The individual air-conditioner.
The remote air-conditioner operating from a central refrigeration plant.
The ducted system operating from one or more central plants.

(1) *THE INDIVIDUAL UNIT*

The self-contained air-conditioner is now well-known in all tropical climates. This type of unit consists of a refrigerant circuit operated by a mechanical refrigerating unit. Room air is passed through a cold coil (evaporator) where the air is automatically cooled and dehumidified in accordance with the power of the air-conditioner. Such units incorporate a method of air filtration and have provision for the introduction of fresh air from outside the room for ventilation. Most units incorporate a "pump out" device so that the room can be rapidly cleared of smoke and obnoxious smells when necessary. Self-contained air-conditioners vary in size from ½ h.p. upwards.

Smaller sizes of the self-contained air-conditioners usually operate with air-cooled condensers, with the larger styles operating with water-cooled air evaporative type condensers. As a matter of interest, it has become common practice within the last few years to rate self-contained air-conditioning units by horse power and not by BTU cooling capacity. A ton of refrigeration is equivalent to an extraction rate of 12,000 BTUs per hour. In practice 1 h.p. will provide slightly under one ton of refrigeration.

(2) *THE REMOTE AIR-CONDITIONER*

The remote air-conditioner normally incorporates a cooling coil (evaporator), a filter, fans, a fresh air inlet and a drain connection. A cooling medium is carried to the cooling coil by insulated pipework from a central refrigeration plant. Two basic styles are in common practice, namely, the direct expansion refrigeration system, and the chilled water system.

(*a*) *The direct expansion system.* In this system a direct expansion refrigerant (normally Freon) is piped from a refrigerating condensing unit to one or more remote air-conditioners. The size of such an installation is usually limited by the distance between the remote air-conditioner and the condensing unit and by the care which has to be exercised in practice towards ensuring an adequate distribution of refrigerant where more

than one remote air-conditioner is used, but the greater the distance between the air-conditioner and the condensing unit, the greater the danger of losing an expensive charge of the volatile refrigerant, and we normally recommend that the distance between the two should not exceed 20 feet. This distance can, of course, be exceeded under certain circumstances, particularly if pipe runs without joins throughout their length, can be used.

(*b*) *The chilled water system.* In this system, chilled water is pumped round a series of remote air-conditioners from a central chilled water tank. This part of the installation, therefore, becomes one requiring normal plumbing fittings and pipework, the circuit being encased with water returning to the chilled water tank. Water in the tank is kept cold by the evaporator of a direct expansion refrigeration unit installed near the tank. This unit comprises a refrigeration compressor with its condenser piped to the evaporator in the chilled water tank.

This system has obvious advantages where a large number of room units are required. Installation is simplified and there is little danger of a large charge of expensive refrigerant being lost, should a pipe-line become severed. Also, water which is chilled during the summer months for cooling can be heated during the winter months for heating. Consequently, the same installation can be used both for cooling in summer and heating in winter by the mere addition of a heating plant in the plant room.

(3) *The ducted system.* In the ducted system, ductwork is installed to introduce and withdraw air from any number of rooms within a building. The system normally incorporates two plant rooms, viz., the fan plant room, the refrigeration plant room and the boiler plant room, if this latter is required. Although in practice both are frequently incorporated within the same space the duct work is connected directly into the fan plant room.

The fan plant room consists of a powerful centrifugal fan drawing air through a cooling and/or heating coil and a filter. A form of mixing box is usually incorporated so that fresh air can be mixed in the correct proportion with air which has been withdrawn from the conditioned rooms.

The refrigeration plant room incorporates a refrigeration condensing unit which is piped to the cooling coil in the fan plant room. A direct expansion refrigerant is normally used but in some installations chilled water is used to feed a number of separate fan plant rooms installed in various parts of the building. If heating during the winter months is required, then the addition of a heating plant is also necessary.

Any number of adaptations of the above three basic systems can be used by the designer. For instance, a system could be ducted in one part of the building with remote or self-contained units in another part. It is in effecting these adaptations to the best commercial advantage that the skill of the air-conditioning designer is tested.

DESIGN OF DUCTWORK

To ensure full efficiency in an air-conditioning installation incorporating ductwork, very considerable care must be taken in designing the ductwork, so that air is distributed evenly throughout the building. It is normal practice to reduce duct sizes as the air is released through the outlets. Ductwork can be constructed in various metals of which the most popular is galvanised steel. Aluminium and even hardboard can be used for this purpose and it is common practice to build ducts in brickwork or concrete when a building is under construction.

Ductwork can usually be concealed behind some architectural feature of a building as it lends itself to the architect's ingenuity. The duct should be well insulated with cork or some similar application whenever it comes in contact with non-conditioned air. Outlet and return ducts are frequently installed side by side, but this is by no means necessary. In certain buildings it is possible to install only an outlet duct allowing the room air to find its way back to the fan plant room through relief grille plates at low level in the individual rooms. This latter method is particularly effective where there are long corridors available to act as natural return ducts.

Air movement through the ductwork must be given careful thought by the designers as this directly affects the size of the duct. Where quietness is essential, the air movement must be kept to a minimum.

Various types of air outlet grilles are available. The most popular of this is the four-way directional discharge louvre permitting air discharge in any desired direction. Also, in common usage is the "hit or miss" grille which allows the designer to control accurately the amount of air through each outlet.

Automatic dampers can be installed within ductwork to control the amount of air entering any given room. These normally operate in conjunction with a thermostat which reacts to any rise or fall in room temperature. Isolating dampers can, of course, be installed in any duct distributive system to enable a section of the plant to be closed down should it be required. These are normally operated by hand control.

SIZE OF FAN

The size of fan to be used in any type of installation is decided by the quantity of air required every minute, by the velocity of air required and by the resistance of the ductwork, coil, filter, etc., through which the air has to pass. There are three basic types of fan design:

The propeller fan.
The centrifugal fan.
The axial flow fan.

(*a*) *The propeller fan.* The propeller fan is normally only of a reasonably small diameter, its chief use being to circulate free air against only very small resistance. It is frequently used with remote air and self-contained air-conditioners.

(*b*) *The centrifugal fan.* The centrifugal fan is a powerful unit obtainable in an almost unlimited range. It is the type commonly used in duct distributive systems and in remote and self-contained air-conditioners where there is a resistance to air flow. There are two basic designs, namely, those fitted with forward curved plates and those fitted with backward curved plates. The backward curved plate type is usually quieter in operation than the other.

These fans are normally operated on a belt drive which enables the engineer to obtain the exact revolutions per minute required.

(*c*) *The axial flow fan.* A powerful fan operating in a similar manner to the propeller fan—usually of large diameter and capable of overcoming considerable resistance.

Effect Upon Architectural Design

Having dealt with both the principles of air-conditioning and the alternative types of plant that are available, it now remains to make some comments upon how the decision to air-condition a building will effect the basic architectural design. Design will be affected in three ways. First, in relation to room sizes (i.e., cubic content of rooms), secondly, in relation to space for ducts or piping, and thirdly, in the provision of space for plant either locally or centrally.

The provision of proper space for ducting, so as to cause least inconvenience to the use of the building as a whole, and the provision of adequate space for plant and machinery is a matter which any competent architectural consultant should be able to handle, but it is in relation to room sizes that air-conditioning will have its greatest impact on the general design of a building. In hot climates where air-conditioning is not being used the great need is for large spacious rooms with high ceilings, so that as great a volume of air per person as possible can be provided in each room. Immediately a properly designed full-time air-conditioning plant is installed the requirements are completely reversed. Small rooms with the minimum floor areas and ceiling heights are the requirement in order to avoid cooling an unnecessary amount of air; air-changes being obtained by artificial forced ventilation. This is one of the reasons why the air-conditioning of existing buildings, which have not been specifically designed for the purpose, is such a difficult undertaking.

We have seen so often in our travels, air-conditioning units installed in buildings that are utterly unsuited for such a treatment. The net result is that after a few months of gallant work at full-bore all day and night, the whole unit packs up and the owner usually blames the manufacturer. It is very rarely his fault, though admittedly it is sometimes the fault of an over-enthusiastic salesman who, in order to make a sale, has allowed his machine to be installed in an unsuitable position.

EARLY PLANNING ESSENTIAL

However, if the conditioning of old buildings is a difficult task, there is no

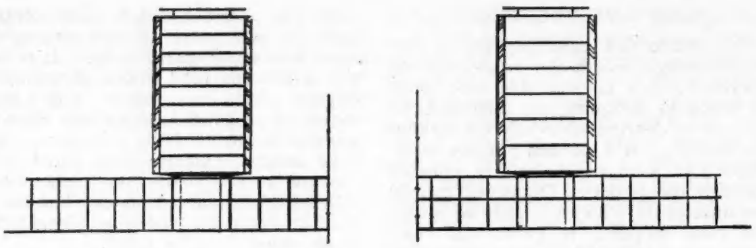


Diagram I.—*Alternative sections through a multi-storey building.*

reason why this should be so in the case of new buildings, so long as the decision to air-condition is taken right at the very beginning and before even preliminary plans are commenced.

But it is a fact that in a hot climate buildings which are intended to be conditioned are still designed with rooms far larger than they need be. This results in a great deal of unnecessary cost in building construction. In this connection we have, on a number of occasions, costed a building designed with floor areas and ceiling heights of the requisite dimensions to be comfortable without conditioning. We have then redesigned to the smaller size of floor area and ceiling height, appropriate to air-conditioning, and costed the result. The saving has always proved more than sufficient to pay for the whole cost of a complete conditioning plant and its requisite plant rooms, etc.

GREAT ECONOMIES

Alternatively, a greater lettable floor area for the same cubic content of building is obtainable when conditioning is applied. For example, a six-storey building, which may require 15 feet from floor to floor, if unconditioned, would be 90 feet high. With conditioning 10 feet from floor to floor would be ample. Consequently, in the same 90 feet of height, nine storeys could be obtained, which would result in a 50 per cent. increase of floor area. And this is still exclusive of any consideration of the fact that in a conditioned building, desks can be arranged much more closely together, consequently each square foot of floor area can be more economically used.

The accompanying Diagram I shows a sketch for a proposed office building. It will be seen from the sections, that the building has ten floors of office accommodation, for a total height of 110 feet. This is designed on the basis of an air-conditioned layout. Were the buildings not to be conditioned, only seven floors would have been possible.

The principles that have been described above for multi-storeyed buildings apply equally to the design of private houses. For example, if it be decided in the first instance that the whole house is to be conditioned, it may well be that both the floor plans and the height can be reduced by 30 per cent., with a consequent total reduction in cubic content of two-fifths. Alternatively, if only the bedrooms are to be conditioned there can still be an equivalent reduction in cube of the bedroom areas. These reductions can again pay for the cost of the conditioning plant or individual conditioning units. Diagram II illustrates these principles applied to a typical house plan.

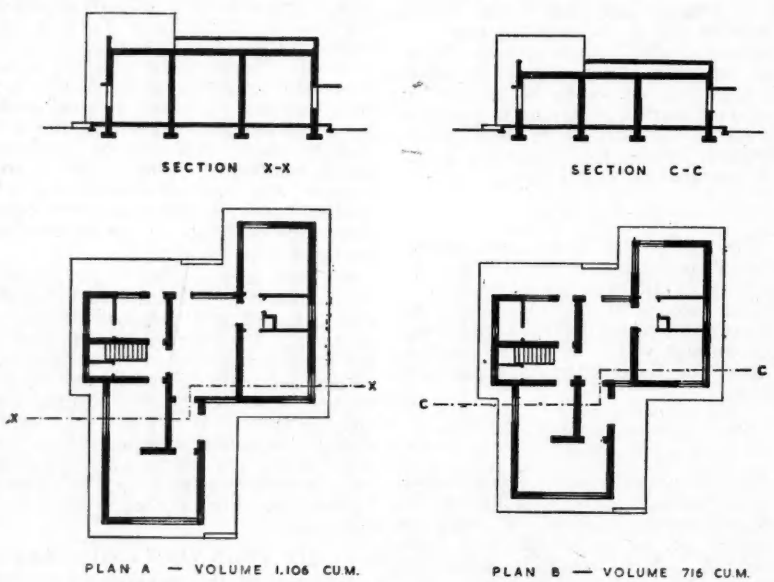


Diagram II.—*Comparative plans and sections of a typical house.*

BOOK

THE INSTALLATION OF ELECTRICITY IN CHURCHES. Published for the Central Council for the Care of Churches by the Church Information Board. Pp. 19. Illustrated. Price 1s.

THIS pamphlet, the first of a series on the care of churches, opens with a characteristic and humorous poem, "Too Hard and too Bright," by John Betjeman, and four amusing drawings by John Piper, showing, from authentic examples in Buckinghamshire, "How *not* to do it," i.e., how not to spoil an old church with unnecessarily hideous and clumsy electrical installations outside and inside the building.

Then follow 12 pages of concise and useful information on the technical details of wiring and installation. The two main "preliminary considerations," according to the authors, are "first, that in the great majority of cases it is neither necessary nor desirable to illuminate the whole interior of the building from roof to floor"; and, secondly, that "every church, differing as it must in its architectural form and requirements from every other, needs individual study and its own appropriate lighting." It is important, too, to arrange the switching so "as to secure economy and adaptability when only part of the building is in use" . . . "It is, therefore, assumed that an architect will be engaged upon the work"; and that "in every normal case the proposals will be examined by the Diocesan Advisory Committee before they are sent to the Chancellor for sanction." . . . "An even and bright illumination of the whole interior tends to destroy the effect of form, and especially of length, in the finest and largest building."

Five principal methods of lighting are described: (i) direct, by pendant fittings, creating "a restful atmosphere" and recommended generally for "churches of traditional design"; or by flood-lighting, never to be adopted "except under the advice of an experienced architect"; (ii) semi-direct, appropriate where it is desired to illuminate "architectural features in the upper part of the building"; (iii) semi-indirect, appropriate for Renaissance churches with galleries and plastered ceilings; (iv) general diffusing, sometimes useful for non-traditional modern churches; and (v) indirect, appropriate in similar circumstances. Fluorescent lighting is said to be "economical in current consumption," but the initial cost of fittings is high, as is that of their replacement, and most of the fittings available are more suitable to commercial than to ecclesiastical use. All electrical fittings, for any of the above systems, should be "simple, functional, and in scale with the building."

The procedure for obtaining a faculty is outlined. Then follows a description of seven systems of wiring. "Of these, the mineral insulated metal sheathed system is probably the best, but may prove rather more costly than the others." It is recommended that "tests on installations which have been in use for five years or more should be made every year, and on new installations every two years." The main switch "should be turned off every night to minimise the risk of fire." The remaining five pages of the pamphlet deal very succinctly and practically with "conditions to be observed by electrical contractors," including wiring to the organ and blowing apparatus.

M. S. B.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	10
Pit Sand	„	1	2	11
Washed Sand	„	1	4	5
¼ in. Shingle	„	1	0	9
¾ in. Broken Brick	„	1	0	0
Pan Breeze	„		10	3
Fine or Coarse Foamed Slag Aggregate ... ... 2 yds. of fine and 2.6 yds. of coarse per ton	per ton	3	0	9

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	per ton	4	16	6
1 to 6 tons, site	„	5	5	6
Rapid Hardening Cement in 6-ton loads and upwards to site	„	5	4	6
1 to 6 ton do. site	„	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	„	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	„	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	„	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	„	6	2	3

BRICKS

Full Loads.

		£	s.	d.
First Hard Stocks	per 1,000	11	7	0
Second Hard Stocks	„	10	11	0
Mild Stocks	„	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C.				
District Commons	„	5	13	0
Cellular do.	„	5	13	0
Keyed do.	„	5	15	0
Rustics	„	6	18	0
Cellular Rustics	„	6	18	0
Single Bullnose do.	„	6	13	0
Sandfaced	„	7	13	0
Best Blue Pressed Staffs (London Stations) ...	„	24	19	6
Do. Bullnose (London Stations)	„	25	13	6
Blue Wire Cuts (London Stations)	„	22	11	0
Midhurst Lime Bricks (London Sites)	„	10	3	0
Uxbridge Whites (London Sites)	„	9	1	6
Special Purpose Sandlime Bricks (London Sites) ...	„	7	14	0
2½ in. Best Stourbridge Fire Bricks (London Stations)	„	24	6	0
3 in. do. (London Stations)	„	29	3	3
2½ in. Machine - made Sandfaced Red Facings (London Sites)	„	13	19	6
2½ in. Machine-made Multi Red Facings (London Sites)	„	14	4	6
2½ in. Hand-made Sandfaced Red Facings (London Sites)	„	14	11	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	„	14	11	0
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London Sites)	„	17	5	6
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London Sites)	„	17	5	6
Rubber Bricks for gauged arches (London Sites) ...	per 1,000	41	10	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	„	13	6	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	„	14	4	6
Glazed Bricks (London Sites), White, Ivory, Brown—				
Stretchers	„	64	0	0
Headers	„	63	0	0
Quoins, Bullnose and 4½ in. Flats	„	80	0	0
Double Stretchers	„	85	0	0
Double Headers	„	77	10	0
One side and two ends	„	87	0	0
Two sides and one end	„	89	10	0
Splays and Squints	„	83	0	0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.				

PARTITION SLABS, etc.

Delivered Central London Area.

	Minimum lorry loads.		£	s.	d.
Hollow Clay Partition Blocks (Keyed)					
*2 in.	140 yds.	per yd. sup.		4	3
*2½ in.	140 yds.	„		4	6
*3 in.	120 yds.	„		5	2
Building Blocks (Keyed)					
*4 in. (6 cavity) ...	95 yds.	„		6	7
6 in. (8½" × 5½") ...	1250 Blocks	per 1000	25	14	0
*Half blocks at no extra charge.					
Clinker Concrete					
2 in.	100 yds.	per yd. sup.		3	7
2½ in.	85 yds.	„		4	2
3 in.	75 yds.	„		5	0
4 in.	55 yds.	„		6	2
Cranham					
2 in.		„		6	8
2½ in.		„		7	4
3 in.		„		8	7
4 in.		„		10	7
4½ in. Load bearing quality		„		11	8
Floor Blocks and Filler Tiles					
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	32	11	0
4 in. do.		„	34	18	0
5 in. do.		„	41	11	0
6 in. do.		„	46	16	0
7 in. do.		„	56	18	0
8 in. do.		„	66	14	0
10" × 3" × ½" Filler Tiles in multiples of 10 tiles		per 1,000 multiples	56	2	0
12" × 3" × ½" do.	do.	„ „	63	17	0
10" × 4" × ½" do.	do.	„ „	69	14	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10% +67½%	+10% +97½%	+10% +107½%
Tested Quality	+37½% +67½%	+37½% +97½%	+37½% +107½%
B.S.S. Tested do.	+47½% +67½%	+47½% +97½%	+47½% +107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	13	6
4 in. do.	„	14	2	0

STONE

		£	s.	d.
Bath Stone—				
Monks Park	per ft. cube		7	10
St. Aldhelm Box Ground	„		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	„		8	7
Beer Stone. Delivered London area	„		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	„		8	1½
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	4	3
12 in. × 6 in. do. do.	„	2	6	0
12 in. × 3 in. Plain coping, twice throated ...	„	1	15	4
12 in. × 3 in. Weathered and twice throated coping	„	2	7	4
14 in. × 6 in. do. do.	„	2	2	8
4½ in. × 9 in. Plinth, rubbed on top and face ...	„	1	18	1
3 in. sawn two sides Slabs, random sizes	per ft. sup.		6	9

STONE—*continued*

		£	s.	d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1	3	5
Do. do. fair one edge for fair faced brickwork		1	7	10
Hard York—				
12in. × 2in. Square Steps, rubbed on top and edge	per ft. run		8	2
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2	3	8
12 in. ×6 in. Plain Steps, rubbed top and front ...	,,	1	18	3
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.		7	10
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2	13	10

TILES and PANTILES

Delivered London area by road in 6 tons or over	per 1,000		
Machine-made Pantiles and French pattern Tiles from Lincolnshire district		29	8	0
Hand-made Pantiles Berkshire district		47	10	0
Hand-made Double Roman Bridgwater district		58	13	6
Hand-made 10½ × 6½ tiles Berkshire district		13	1	9
Machine-made 10½ × 6½ Staffordshire district		13	8	9
Hand-made Hip and Valley tiles per doz.		1	8	9
Machine-made Hip and Valley tiles do.		1	6	6
Concrete tiles 10½ × 6½		7	14	6
do. Interlocking (49S)		18	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual				
24 × 12	124	6	4
22 × 12	103	3	8
22 × 11	93	4	6
20 × 12	88	0	0
20 × 10	82	1	0
18 × 10	59	6	6
18 × 9	52	0	0
16 × 10	48	16	0
16 × 8	38	0	0

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—						
Joinery quality	Ex. Wharf	per standard	£110 to £130			
Carcassing quality	do.	,,	£98 to £102			
1 in. Tongued and Grooved Flooring	do.	,,	£108	0	0	
Hardwood—						
Mahogany—African S.E. ...	do.	per ft. cube	1	0	0	
do. Honduras do. ...	do.	,,	3	5	0	
Oak European do. ...	do.	,,	2	5	0	
do. Japanese do. ...	do.	,,	2	10	0	
do. English Logs sawn	do.	,,	1	15	0	
Teak 8 in. average S.E.	do.	,,	3	5	0	
Walnut African Logs sawn	do.	,,	1	5	0	

DOORS (in Lots 1-11)

Delivered London area.				
1½ in. 4 Horizontal Panel Pattern 4 in. deal				
2 ft. 0 in. × 6 ft. 6 in.	each	1	12	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in.	,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in.	,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	11	6
2 in. Panel, top panel open. Pattern 2 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in.	,,	2	3	6

SUNDRIES

Delivered London area				
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.		5	8
1½ in. do. (67 yds. to 1 ton)	,,		7	4
2 in. do. (52 yds. to 1 ton)	,,		8	11½
2½ in. do. (45 yds. to 1 ton)	,,		10	3
3 in. do. (39 yds. to 1 ton)	,,		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.				
½ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2	2	6
¼ in. Hardboard do.	,,	2	1	6
⅛ in. do. do.	,,	3	2	6
⅛ in. Asbestos Flat Building Sheets	per yd. sup		3	2
Roofing Felt, 1-ply	,,		1	6
do. 2-ply	,,		1	9
Best Scotch Glue, in slabs	per ½ cwt.	5	0	0
do. pearl	,,	5	5	0
Croid Glue	28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots)	per ton	58	5	0
do. 4 in. and up (1-ton lots)	,,	54	15	0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2	16	3
do. 4 in. and up (4-cwt. lots)	,,	2	12	9

METALS

STEEL JOISTS, ETC.

Basis Joists—				
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	39	0	0
Extra for sizes				
3 in. × 1½ in., 4 in. × 1½ in.	,,	3	10	0
3 in. × 3 in.	,,	2	10	0
4 in. × 3 in., 10 in. × 4½ in.	,,	1	10	0
5 in. × 2½ in., 5 in. × 3 in.	,,	1	15	0
4½ in. × 1½ in.	,,	3	5	0

					£	s.	d.
5 in. × 4½ in.	7 in. × 3½ in.	13 in. × 5 in.	... per ton			15	0
6 in. × 3 in.	24 in. × 7½ in.	... ...	... ,,		2	0	0
6 in. × 4½ in.	7 in. × 4 in.	8 in. × 4 in.	... ,,		1	5	0
9 in. × 4 in.	10 in. × 5 in.	... ...	...		1	0	0
12 in. × 5 in.	22 in. × 7 in.	... ...	...				
9 in. × 7 in.	10 in. × 8 in.	12 in. × 8 in.					
14 in. × 5½ in.	14 in. × 6 in.	14 in. × 8 in.					
15 in. × 5 in.	15 in. × 6 in.	16 in. × 6 in.	..			10	0
16 in. × 8 in.	18 in. × 6 in.	18 in. × 7 in.					
18 in. × 8 in.	20 in. × 6½ in.	20 in. × 7½ in.					
Steel angles average price					40	15	0
Steel tees average price ... ... ,,					41	15	0
Fabricated work delivered London—							
R.S. Joists cut and fitted ... ... ,,					55	10	0
Compound girders ... ... ,,					61	0	0
Stanchions ... ... ,,					66	10	0
Compound stanchions ... ... ,,					70	5	0
In Roof Work—Trusses and Purlins ... ... ,,					83	0	0
Average prices not for awkward work.							
Mild Steel Ferro-Concrete bars to BSS785 ex London							
Stock ⅜ in. diam., and upwards ... ... ,,					40	6	0
½ in. diam. ... ...per ton extra					4	7	0
⅝ in. do. ... ... ,,					3	7	0
¾ in. do.					2	9	6
½ in. do. ... ... ,,					1	12	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A NET		
Class B + 9½%	Light + 24½%	Malleable List — 35% + 40%
Class C + 25½%	Heavy + 32%	
Black—		
Class A — 21½%		
Class B — 11%	Light + 11½%	Malleable List — 35%
Class C + 1½%	Heavy + 19½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/3½	2/11	/10
3½ in.	3/7	3/2	/10
4 in.	4/7½	3/7	1/3
4½ in.	5/1	4/–	1/6
5 in.	5/8	4/4	1/9

C.I.O.G. GUTTERS

3 in.	4/3	3/10	1/–
3½ in.	4/9	3/10	1/3
4 in.	5/3	4/–	1/6
4½ in.	5/8	4/7	1/9
5 in.	6/2½	5/3	2/–

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	7/0½	3/7	5/2
2½ in.	7/0½	4/–	6/11
3 in.	7/11	5/–	7/6
3½ in.	9/–	5/11	9/–
4 in.	10/5	7/2	10/8

L.C.C. COATED SOIL PIPES

2 in.	8/–	6/2	7/6
2½ in.	8/5	6/10	9/4
3 in.	9/5½	7/6	11/1
3½ in.	10/7	9/4	12/11
4 in.	12/0½	10/5	15/3

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated 1st February, 1955, NET and tonnage allowance. 4-ton lots 5 per cent., 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.

	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	24/10	17/3	30/6
6 in.	2	0	1	36/10	36/–	62/–

ASBESTOS RAIN-WATER PIPES AND FITTINGS

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	...per yd.	3/9	4/–	4/10	6/5
Shoes	... each	2/5	2/8	3/2	4/3
Single Branches	... ,,	3/9	4/6	5/4	7/6
Bends square or obtuse	,,	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	,,	2/11	3/9	4/3	5/11
do. 6 in. do.	,,	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	,,	/10	/11	1/–	1/2
Angles	,,	2/11	3/5	4/1	4/10
Nozzles	,,	2/10	3/4	3/10	4/7
Union Clips	,,	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends	each	2/1	2/5	2/8	2/11	4/3
Stop ends	,,	/9	/10	/11	1/–	1/2
Angles	,,	2/5	2/8	2/11	3/2	4/3
Nozzles	,,	2/1	2/5	2/8	2/11	4/3
Union Clips	,,	1/–	1/1	1/2	1/4	2/–

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	41 17 6
Mild Steel Bars	37 14 0
Mild Steel Hoops	39 1 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	49 6 0
24 gauge	51 16 0
26 gauge	54 16 0
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	56 6 6
24 gauge	59 16 6
26 gauge	65 1 6
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	57 16 6
24 gauge	61 6 6
26 gauge	66 11 6

Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area.

All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	77/-	114/6				
Toilet bib cocks for iron ...	99/-	142/-				
Screwdown stop cocks for iron	66/-	95/9	188/-	323/6	462/-	815/-
do. with two unions for lead	89/-	132/-	234/4	419/-	554/6	1234/3
Double nut boiler screws ...	16/6	23/3	42/-	43/-	59/6	83/8
Heavy Croydon ball valves ...	68/3	155/3	237/7	433/6	614/-	
Plumbers' union brass lead to iron	17/4	21/-	34/9	60/6	74/6	145/3
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	29/9	36/4	52/9	82/6	105/6	137/6
Brass sleeves		27/6	27/6	49/6	66/-	67/-
		1¼ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.	
Lead P. trap with brass cleaning screws	63/6		79/6	127/-	217/3	
Lead S. trap do.	77/-		95/-	156/3	281/-	

Solder	s. d.
Plumbers' ... ... per lb.	3 5
Tinmen's ... ... „	4 2
Blow pipe ... ... „	4 3

Copper tubes BSS 659/1944 on the basic price of 40½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.
⅛ in. × 19 gauge ...	12½	Total per lb.	53⅛
¼ in. × 19 „ ...	11½	„ „	51½
1 in. × 18 „ ...	9⅛	„ „	50
1¼ in. × 18 „ ...	9	„ „	49⅛
1½ in. × 18 „ ...	9	„ „	49⅛
2 in. × 17 „ ...	10⅛	„ „	51

	£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras ... ... per ton	414 5 0
Sheet Zinc 10 gauge (25 SWG) 5 cwt. lots upwards per cwt.	8 6 0
do. 12 gauge (23 SWG) do. ... „	8 4 0
do. 14 gauge (21 SWG) do. ... „	8 3 0
Brass tubes basic price, plus gauge and manufacturing extras ... ... per lb.	2 7⅞

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

	£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards per ton	140 5 0
Lead Water Pipe in coils ... ... „	141 10 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia. ... „	143 0 0
do. over 4 in. dia. ... ... „	145 0 0
Lead Gas or Untinned Compo pipe ... ... „	143 0 0

Extras over Basis for quantities under 1 ton

5 cwt. and under 1 ton ... ... per cwt.	2 0
3 cwt. do. 5 cwt. ... ... „	4 0
1 cwt. do. 3 cwt. ... ... „	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £99 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

			£ s. d.
Coarse Pink in 1-ton loads and over	Delivered on Site	per ton	7 6 6
do. White	do.	do. ... „	7 14 3
Sirapite Coarse	do.	do. ... „	7 9 0
do. Fine	do.	do. ... „	7 17 0
Blue Lias Lime in 6-ton loads	... ...	„	6 9 6
Hydrated Lime	do.	„	5 12 6
Lump Lime	do.	„	5 2 0
White Keen's or Parian Cement in 1-ton loads	...	„	10 4 0
Pink Keen's or Parian Cement in 1-ton loads	...	„	9 18 6
Granite Chips in 6-ton loads	... ...	„	2 6 3
Hair		per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery.	Delivered site ...	per yd.	2 3
1,200 yds.		„	2 2½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery.	Delivered site	„	2 6
1,200 yds.		„	2 5½

PAINT AND DISTEMPER

Delivered London area.

	£ s. d.
Ceiling Distemper ... ... per cwt.	1 7 6
Washable Distemper ... ... „	5 5 0
Gloss Paint ... ... per gal.	2 10 0
Snowcem cement paint (in 1 cwt. drums) ... ... per cwt.	3 11 0

Lead Products and Oils.

Ground White Lead, 1 cwt. kegs ... ... per cwt.	8 18 0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins per gal.	3 2 0
Genuine Red Lead, Dry, 1 cwt. keg ... ... per cwt.	6 19 3
Genuine Linseed Oil Putty, 1 cwt. keg ... ... „	2 11 0
Size XD quality, 28 lb. ... ... per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra ... ... per gal.	12 0
Boiled Linseed Oil (5 gal.) do. ... ... „	12 6

Sundries.

Turpentine substitute (5 gal.) drums extra ... „	5 6½
do. do. (40 gal.) do. do. ... ... „	4 8½
Solignum, Brown (5 gal. cans) Exterior ... ... „	6 6
Creosote (40 gal. barrels) ... ... „	2 0
Paste Powder (1 lb. packets) ... ... per lb.	1 6
White Lining Paper ... ... per piece	1 0

VARNISHES, etc.

Delivered London area.

Oak Varnish, Outside or Inside ... ... per gal.	1 12 6
Oak Pale Copal do. ... ... „	1 18 0
Hard Drying Oak for Inside ... ... „	2 0 0
Crystal Paper Varnish do. ... ... „	2 0 0
Eggshell Flat Varnish do. ... ... „	2 14 0
Finest Carriage Varnish ... ... „	2 10 0
Front Door Varnish ... ... „	2 0 0
Japan Gold Size ... ... „	1 12 6
Black Japan ... ... „	1 14 0
Brunswick Black ... ... „	1 10 0
Berlin Black ... ... „	1 5 0
Terebene ... ... „	1 8 0
Knotting (1 gal. bottles free)... ... ... „	2 2 0
French and Brush Polish (do.) ... ... „	1 18 0

GLASS

Delivered London area.

	Per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	5½
24 oz. „ „ „ „ „ „	7½
26 oz. „ „ „ „ „ „	10
32 oz. „ „ „ „ „ „	1 1
¼ in. Rolled Plate	9
⅜ in. and ½ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns :	
White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each
P.B.2 5⅛ × 5⅛ × 3⅞ in.	2 9
P.B.3 7⅛ × 7⅛ × 3⅞ in.	4 2
P.B.32 7⅛ × 7⅛ × 3⅞ in.	4 2

Radiused Corner Blocks to match up with—	
P.B. 2	5 3
P.B. 3	6 9
P.B. 32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 7
„ „ „ 5 ft. sup.	4 5
„ „ „ 45 ft. sup.	5 1
„ „ „ 100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.* plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways 8 4

Not exceeding 180 ft. sup. or ditto	11 3
Not exceeding 200 ft. sup. or ditto	16 0

Plates exceeding 200 ft. sup., prices on application.

Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. super s. d.
18 oz. sheet O.Q.	3,000	4½
24 oz. „ „	2,000	6½
26 oz. „ „	2,000	7½
32 oz. „ „	2,000	10½
¼ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte...	1,000	10½
⅜ in. and ½ in. Rolled Plate or Rough Cast ...	2,000	10½
¼ in. Wired Cast, Hexagonal...	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM APRIL 18, 1955. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	4/–	3/11½	3/11	3/10½
Labourers	3/5½	3/5	3/4½	3/4

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D.(exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippenham Within and Hardenhuish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (excepting Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
,, Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
,, North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 1½d.; Labourers, 3s. 7d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 4s. 1d.; Labourers, 3s. 6½d. †Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 1½d. per hour. Women engaged on work other than craft processes, 2s. 9½d. per hour.

For Building Trade Wages in Scotland see page 652.

BUILDING WAGE INCREASES

National Joint Council's Statement

THE National Joint Council for the Building Industry has now issued officially the constitutional amendments decided upon by the Council at their meeting on March 18. The effect of these decisions is that the current standard hourly rates of wages for craftsmen will be due to be increased by 2½d. per hour, and the corresponding rates for labourers will be due to be increased by 1¼d. per hour, on and from Monday, April 18. Following are the new rates:

NEW RATES PER HOUR

(As from Monday, April 18, 1955)

1. CRAFTSMEN AND LABOURERS

	London		Grade				Liverpool
	Inner	Outer	A	A1	A2	A3	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Craftsmen	4 1½	4 1	4 0	3 11½	3 11	3 10½	4 1½
Labourers	3 7	3 6½	3 5½	3 5	3 4½	3 4	3 7

2. APPRENTICES AND YOUNG MALE LABOURERS

It is to be noted that these increases in the Standard Rates of Wages for Craftsmen and for Labourers require consequential adjustments in the rates of wages of:

(i) Apprentices. (ii) Young Male Labourers.

Under the respective Agreements the rates for Apprentices are a prescribed percentage of the Craft rate and those of Young Male Labourers are a prescribed proportion of the Labourer's rate. The new rates of wages are as follows:

APPRENTICES

Age	Per cent. of Craftsman's Rate	London		Grade				Liverpool
		Inner	Outer	A	A1	A2	A3	
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
15	25	1 0½	1 0½	1 0	1 0	11½	11½	1 0½
16	33½	1 4½	1 4½	1 4	1 4	1 3½	1 3½	1 4½
17	50	2 0½	2 0½	2 0	1 11½	1 11½	1 11½	2 0½
18	62½	2 7	2 6½	2 6	2 5½	2 5	2 5	2 7
19	75	3 1½	3 0½	3 0	2 11½	2 11½	2 11	3 1½
20	87½	3 7½	3 7	3 6	3 5½	3 5½	3 4½	3 7½

YOUNG MALE LABOURERS

Age	Per cent. of Labourer's Rate	London		Grade				Liverpool
		Inner	Outer	A	A1	A2	A3	
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
15	33½	1 2½	1 2½	1 2	1 1½	1 1½	1 1½	1 2½
16	45	1 7½	1 7½	1 6½	1 6½	1 6½	1 6	1 7½
17	66¾	2 4½	2 4½	2 3½	2 3	2 3	2 2½	2 4½
18	100	3 7	3 6½	3 5½	3 5	3 4½	3 4	3 7

AMENDED SLIDING SCALE

In the interests of clarity and for purposes of easy reference, the scale now operating under Rule 11 (*b*) (2), is set out below:

Index of Retail Prices	Standard Rate Grade A
	s. d.
142–145	4 0
139–142	3 11½
136–139	3 11
133–136	3 10½
130–133	3 10
127–130	3 9½
124–127	3 9
121–124	3 8½
118–121	3 8
115–118	3 7½
112–115	3 7
109–112	3 6½
106–109	3 6
103–106	3 5½
100–103	3 5*
97–100	3 4½
94–97	3 4
91–94	3 3½
88–91	3 3
85–88	3 2½
82–85	3 2

* 100–103 points corresponding to Standard Grade A Rate of 3s.5d.

NATIONAL WORKING RULE 4—OVERTIME (FIXATION OF PUBLIC (LOCAL) HOLIDAYS)

The National Joint Council also gave further consideration to a Constitutional Amendment Notice from Employer Adherent Bodies proposing amendment to the relevant sections of National Working Rule 4—(Overtime) which deal with the fixation of Public (Local) Holidays.

The objects of the amendment were, (i) to clarify the effect of the relevant sections of the Rule by removing the reference to Scotland and to make it clear that the fixing of a public (local) holiday entails not only premium (overtime) rates of payment but also the actual observance of the days of holiday (as contemplated by the separate Four-Party Public Holidays Agreement), and (ii) to make adjustments for the purpose of mitigating or removing anomalies in some localities where the number of days of public holiday additional to Christmas Day, prescribed locally, has been less than five.

Upon the recommendation of the *Ad Hoc* Committee, to whom the matter had been referred for detailed examination and report, the Council decided to amend the appropriate sections of Working Rule 4 as follows:

Delete the two paragraphs commencing: "Christmas Day (in England and Wales) and on the first working day of the year in Scotland double time" and ending: "and at double time thereafter." *and*

Insert in their place the words: "In each locality there shall be not less than five days of public holiday in each year additional to Christmas Day.

These days shall be jointly recognised by employers' and operatives' organisations as local holidays for the purposes of the building industry in that locality subject to confirmation through the machinery of the National Joint Council.

On these days shops and jobs in the locality shall close down.

Work required to be done on the days so fixed and recognised as local holidays for the purpose of this agreement shall be paid for:

(i) Christmas Day—double time.

(ii) The other five or more days at time-and-one-half for the period of the normal working day and at double time thereafter or at double time throughout where that premium rate for local holidays has been approved and prescribed for the locality in the regional and/or local working rules."

Ratification of this constitutional amendment having been declared by the adherent bodies, as required under Rule 10 of the Rules and Regulations of the Council, the Procedure Committee hereby promulgates the foregoing decision to operate on and from Monday, April 18.

WATCHMEN'S RATES

The National Joint Council also decided that the current rates of remuneration of watchmen in the building industry should be increased by 9d. per shift, on and from Monday, April 18.

EASTERN COUNTIES JOINT CONSULTATIVE BOARD

Annual Report

THE fourth annual report of the Eastern Counties Joint Consultative Board of Architects, Quantity Surveyors and Builders has now been issued, and extracts are given below:

With regard to the operation of the fluctuations clause, the report states, the Board learned with pleasure of a statement issued by the Eastern Federation of Building Trades Employers in which members were recommended to consider dispensing with the schedule of basic prices of materials under the fluctuations clause in contracts up to £3,000 in total value, subject to the acceptance of the tender within a reasonable period to be indicated by the tenderer. Although steady advances in the cost of transport and raw materials make the stabilisation of building prices difficult, this step was warmly welcomed. It is emphasised that the greater the opportunity for recovering increased costs, the lower the resistance to them.

The Board considered that the co-operation of sub-contractors in this matter is most desirable, and it would draw attention to the help architects can give in this connection when nominating sub-contractors and suppliers under Clauses 21 and 22 of the RIBA Standard Form of Contract. The Board has invited the National Joint Consultative Committee to consider this matter in the light of the steps taken in the Eastern Counties.

In considering the report of the Joint Committee on Tendering Procedure the Board, having received information on the operation of systems of selective tendering in the Eastern Counties, expressed the hope that in the light of this, selective tendering would be increasingly adopted by public authorities.

The Board considered the difficulty experienced by contractors in insuring against the risk of collapse and subsidence, and in particular of ascertaining the premium before tendering. It was agreed to recommend that a provisional sum should be inserted in the Bills of Quantities, the amount to be based on inquiries made by the architect.

In considering the report of the working party set up by the Minister of Works to consider the procedure regarding retention moneys, etc., the builder members of the Board referred to the serious burden which retention money placed on their finances, a difficulty which was accentuated by the recent rise in the Bank rate. It was agreed to draw the attention of architects to the desirability of specifying less than 10 per cent. for retention purposes wherever this was considered possible. The Board also emphasised the desirability of expressing retention funds as specific amounts calculated by reference to the contract sum.

The Board had encountered concern at the widespread specification of emulsion paints before adequate research data on all aspects of their use was available. On reviewing the position it was considered that the attention of architects and surveyors should be drawn to the benefits or discussing these matters with established painting contractors.

The Board in its first report had advised that if in a specification there was a recommendation of a specified manufacturer, there should be added "or other equal brand approved by the architect." The Board now wish to extend this advice to the provision of a list of several manufacturers considered suitable, before the addition of the phrase originally recommended.

Since the last report was issued, a National Joint Consultative Committee has been set up.

The Board gave detailed consideration to the provisions of clauses 14 and 15 of the RIBA Standard Form of Contract, and in particular to the situation which would arise through the employer requiring in the Bills of Quantities that a contractor should insure for all risks under Clause 14. The Board were informed that with such a requirement to insure, contractors, to fulfil their obligations, might have to arrange for special insurance cover after the conclusion of the maintenance period, which might add considerably to their insurance costs. It was decided to ask the National Joint Consultative Committee to consider this matter to see whether this difficulty could be overcome.

Copies of this report, prepared by the Honorary Secretary to the Board, are available from 95 Tenison-road, Cambridge.

SURREY FOREMEN'S DINNER

The fifth annual dinner of The Surrey Association of Builders' Foremen and Clerks of Works, was held recently at Guildford, Surrey. The chairman for the evening was Mr. E. G. Llewellyn, FIOB, MRSanI, senior vice-president of the Southern Counties Federation of Building Trades Employers. Proposing the toast of "The Association," Mr. Llewellyn spoke of the opportunities available to-day for training general foremen. He thought that all who wished to attain the high standard of foremanship required to-day should take advantage of these facilities. In reply, the Association's president, Mr. A. A. Stallard, MICW, said the Association already gave active encouragement to its members to train themselves for greater responsibilities. At the Association's annual general meeting Mr. R. Walker was elected president for 1955. Mr. A. A. Stallard, of "Munscot," Hascombe-road, Godalming, Surrey, is the new secretary.

NEWS IN BRIEF

DISREPAIR CERTIFICATES

In order that the Minister of Housing and Local Government may be fully informed of the situation, local authorities have been asked for a return of a record of the number of applications by tenants for certificates of disrepair, of the numbers granted and rejected, and of applications by landlords for revocation of certificates of disrepair and the numbers granted and rejected, for the period August 30, 1954, to March 31, 1955.

PHOTOGRAPHY EXHIBITION

The Royal Photographic Society's Spring exhibition of architectural, commercial and industrial photography will be held in the Society's house at 16, Princes-gate, SW7, from May 4 to 27. Admission free, it will be open each weekday from 9.30 a.m. to 7 p.m. and on Saturdays until 5 p.m. It will not be open on Sundays Two commentaries by a panel of selectors on those colour transparencies accepted will be given on May 10 and May 20, at 7.15 p.m. Free admission tickets from the Secretary, 16, Princes-gate, SW7.

SURVEYING COURSE

A summer course in land surveying and levelling will be held during June and July at the East Ham Technical College. It will include both practical work in the field and work in the drawing office. It is suitable for students of architecture, the building trades, structural and civil engineering, and for those preparing for the examinations of the Surveyors' Institution. There will be 1st, 2nd and 3rd year groups. Each group will have one evening each week for field work, and one evening for theory; from 6.30 to 9 each evening. Full details can be obtained from the Head of Department of Building, East Ham Technical College, Arragon-road, East Ham, E6.

A. & J. SIMMONS Ltd.
Building Contractors
of Woking, Surrey
•

CORRECTION

Messrs. Bradstreet's British Ltd. wish it to be known that as a result of some confusion in their offices they had issued supplementary reports to certain of their subscribers to the effect that A. & J. Simmons Ltd., Building Contractors, of Woking, Surrey, had decided upon Members' Voluntary Winding-up. Messrs. Bradstreets have been assured by the above contractors that they have no intention of Winding-up, but whilst Messrs. Bradstreets, following discovery of the error, took the earliest possible steps to correct the same, such incorrect information is, so they are informed, in circulation within the Building, Allied and other Trades in Southern England. Accordingly, Messrs. Bradstreets publish this announcement in order to correct any misapprehension on the subject.

NEW COMPANY

The name of the Renway Construction Co., Ltd., builders and contractors, of 27a, Broad-street, Wokingham, Berks, which was registered as a new company on March 8, was mis-spelt in our last issue and should read as above.

EMPLOYMENT FIGURES

An increase of 9,000 in the numbers employed in the building and contracting industries occurred during February, according to figures issued by the Ministry of Labour and National Service. This brought the total employed in these industries at the end of the month to 1,430,000.

DECORATORS' EXAMINATIONS

The Associateship examinations conducted by the Incorporated Institute of British Decorators and Interior Designers Institute will be held from June 27 to July 1, at various centres in London and throughout the country. Entry forms from the Secretary, Drayton House, Gordon-street, WC1, must be submitted not later than April 30.

MATERIAL PRODUCERS' MEETING

The annual general meeting of the National Council of Building Material Producers was held at the Connaught Rooms, London, on March 24, when the following office bearers were elected: Sir Harry Pilkington, president; Mr. F. C. Braby and Mr. H. E. Peirce, vice-presidents; Mr. J. L. McConnell, hon. treasurer.

HULL TRADING ESTATE

In a report on future industrial development in Hull City, Mr. H. F. Alston, Hull Town Planning Officer, has stated that a 213-acre trading estate in the Sutton-road area between Leads-road and the River Hull (of which 165 acres may be available for industry within the next few years) could provide employment for some 6,000 people in Hull, if fully developed. The cost of such an estate would be about £600,000.

INTERNATIONAL EXHIBITION

The first International Building and Public Works Equipment and Materials Exhibition is to be held in the Lower Park of the St. Cloud National Domain, Paris, from June 25 to July 10. Stands will be arranged in groups, and allocated to each branch of the industry. These will include general equipment, plumbing, heating, prefabrication, builders hardware, joinery, exterior layout and landscape gardening. A housing exhibition will show French and foreign building; with individual houses, schools and public buildings completely fitted out. Subsequent exhibitions will be held for two months every summer. Particulars from 9 Rue Boissy D'Anglas, Paris 8.

PERSONAL COLUMN

The following appointments have been announced by Taylor Woodrow, Ltd.: MR. L. OLORENSHAW becomes chairman of Taylor Woodrow (West Africa), Ltd., and MR. T. FAIRCLOUGH chairman of Taylor Woodrow Homes, Ltd. MR. R. E. ALDRE is appointed deputy managing director of Taylor Woodrow (West Africa), Ltd. A new director of Taylor Woodrow Homes, Ltd., is MR. DOUGLAS G. SLOUGH, formerly chief surveyor.

MR. FRANK BANFIELD, general manager of the Expanded Metal Co., Ltd., Burwood House, Caxton-st., Westminster, SW1, for the past year, has been appointed managing director. He succeeds LT.-CMDR. G. C. HANS HAMILTON, who retains his position as chairman of the company.

TRADE NEWS

SCHOOL AT BIRMINGHAM

In connection with the Secondary Modern School at Kings Heath, Birmingham, which was illustrated in our issue of March 25, we have been informed that the patterned terrazzo floor in the foyer was carried out by Roman Mosaic, Ltd.

SILICONE INSULATION

Tests have been carried out by Brentford Transformers, Ltd., on transformers using the new silicone (class H) insulation. These are understood to have proved that it repels moisture and will not support combustion, thus reducing explosion hazards, as well as showing little change in its dielectric strength in the 200 to 250 degrees C range. An illustrated booklet giving full details is available from the company's offices at Kidbrooke Park-road, Kidbrooke, SE3.

FULLY-AUTOMATIC OIL BURNER

Claimed to be the only fully-automatic vapourising-type oil burner on the market is the "Little" self-lighting burner manufactured by Messrs. D. E. Studdard, Westfield Mill, Mytholmroyd, Halifax, Yorks. Operating on light furnace oil, it is self-lighting and self-extinguishing and with the addition of a time clock can be automatically shut down during any predetermined period. The equipment has been tested and approved in the United States by the US Underwriters' Laboratories.

FIRE EXTINGUISHER

A demonstration of the effectiveness of their "Pistole" fire extinguisher was given on April 5 by Antifyre, Ltd., Shaftesbury-road, Acton, W3, to a gathering of officials and tenants at Covent Garden Market. This portable pistol-like extinguisher employs the principles of deoxygenation, blanketing and beating, and ejects a fine cloud of powder over the blaze. It is claimed to be capable of extinguishing a 20 ft. spread of flame in one second, and is rechargeable on the spot.

PLASTICS IN MINING

An essay competition throughout the mining industry was recently organised by Rubber Improvement, Ltd., of Wellingborough, Northants, in conjunction with the "Iron and Coal Trades Review," on the subject of "Present and Future Development of Plastics in the Mining Industry." The first prize of £70 has been awarded to Mr. G. G. Heathcote; the second prize of £15 to Mr. A. G. Withers, FRICS, AMICE, and third prize of £10 to Mr. F. J. Neary.

HYDRAULIC CLIMBING JACK

An hydraulic climbing jack for use by concrete workers employing the moving form method of construction has been produced by Tangyes, Ltd., of 60, Grosvenor-street, W1. By this method one power pump can supply the energy for all the jacks in use, and the jacks can all be controlled by one man. Each jack has a normal working load of about 2 tons, a 1-in. travel per piston-stroke cycle, and two pairs of grips. Individual control of each jack is obtained by closing a stop valve, and coupling a small hand-pump to an alternative pressure connection.

HOT WATER SUPPLY

The Ideal No. 2A "Autocrat," placed on the market by Ideal Boilers and Radiators, Ltd., of Hull, is a larger model of the No. 1 "Autocrat" domestic boiler introduced last year and has an increased output for those households where a larger hot water supply is desirable—such as where radiators are installed for background heating.

CONTEMPORARY FIREPLACES

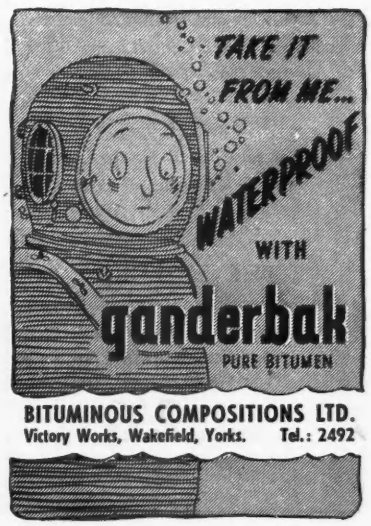
Two contemporary fireplaces have been introduced by Claygate Fireplaces, Ltd., Claygate, Surrey. One has a decorative wrought-iron hinged screen which acts as a guard, and the other has a recessed cupboard on each side of the fire opening. Both designs have wooden overmantels, made in light oak, mahogany, and light or dark walnut.

METAL DOOR FRAMES

An alternative range of standard metal door frames for housing, in 18-gauge sheet steel, has been introduced by the Metal Window Association, Ltd., Burwood House, Caxton-street, SW1. Sizes, fittings, finish and specification (except for the thickness of sheet) will be the same as in the existing standard range of 16-gauge frames, but prices will be lower.

GENERAL CATALOGUE

A comprehensive general catalogue has been published by the Standard Range and Foundry Co., Ltd., Manfield House, Southampton-street, 376 Strand, WC2, containing data on their range of fireplaces, sanitary ware, boilers, ironmongery, tools and plant. It is divided into sections, each dealing with specialist departments of the trade, such as heating, sanitary sanitation, plumbing and hardware, and provision has been made for the insertion of substitute pages dealing with products placed on the market at a later date. A useful feature is that there is no need to detach any bound-in pages for office purposes, since the company will supply loose copies upon request. Strongly bound and copiously illustrated, the catalogue is intended as a standard work of reference for the industry.



OVERSEAS BUILDING

Hong Kong.—Recently, proposals for a bridge across the Hong Kong harbour were brought up for consideration by the Government. As a first step in examining the proposal a UK firm of consulting engineers, Messrs. Mott, Hay and Anderson, are studying the details of the plan to see if the project is feasible. Traffic conditions and the engineering and town planning aspects of the proposal are also being studied.

A number of firms are proposing to build factories. They are as follows: The Meyer Manufactory, Kowloon City-road, Pau Cheung-street for the manufacture of window-type air conditioners; T-Foong Enamel Factory 76-78, Kowloon City-road, for enamelware; Washington Tobacco Factory, 436, Kam Wa-street, Shukiwan, for cigarettes; Wah Fung Works, 31, Mok Meng Har, Castle Peak-road, for stamping enamel blanks; Unifair Iron Works, Boundary/Yee Kuk-streets, for stamping enamel blanks; The China Engineers, St. George's Building, Hong Kong, for steel windows; Overseas Textiles, 11, Lock Shan-road, for the manufacture of a 10,000-spindle mill; Metal Industries Corporation, Ltd., Tung Chow-street, Kowloon, for torches and later the building of a rolling mill.

Norway.—By 1959 a third of the hydro-electric power stations in Norway will be underground installations, according to a White Paper published recently. The White Paper also states that the amount of new hydro-electric capacity ready this year will be 586,700kw.

The Norwegian engineering firm Elektrokemisk A/S has been commissioned by the Venezuelan Government to draw up plans for the pig-iron installations at the big steel plant to be built in the near future. The firm, A/S Veidekke, has secured a contract to build a civil airfield in Ethiopia, at Diredaua, half-way between Addis Ababa and Djibuti. The tender is said to be worth £150,000.

Portuguese East Africa.—Under a 10-year road plan development scheme initiated in Portuguese East Africa a number of main highways are to be constructed. Roads to be tackled are those between Luanda and Dondo, Luanda and Uige, Luanda and Ambriz and Ambrizete, Luanda and Camabatela, the approach to the new airport in Luanda and the road between the Matala dam and Caconda. Technical experts are also at present studying plans for new road connections between Porto Alexandre and Mossamedes and Mossamedes and Sa da Bandeira.

Surinam (*Dutch Guiana*).—The Dutch Government has agreed to invest about $70m. for a 10-year development plan in this self-governing territory, with preference being given to Dutch firms and products in carrying out the works.

Trinidad. — The Government-sponsored Tourist Board plan to build a 300-room air-conditioned hotel in Port of Spain. The hotel would be managed by Hilton Hotels Inc., and a site has been chosen by Mr. John Houser, an executive of the company. The Tourist Board will use the services of the designers of the Carib-Hilton hotel in Puerto Rico, in co-operation with a local architect.

A pioneer industry is to be started on Kronstadt Island, in the Gulf of Paria, by

Barytes and Minerals, Ltd., for the crushing, grinding and pulverising of barytes ore. A crushing mill and powder plant, costing $500,000, designed by Mr. A. H. Richard, AMICE, and managed by Mr. Alvin Tucker, should go into production in August using ore from Brazil. The plant will produce 20,000 tons of crushed ore per year, part of which may be exported to Venezuela. . . . Trinidad Concrete Products, Ltd., already producing tiles and other concrete units in Port of Spain, have acquired a site at Cross Crossing, San Fernando, to operate a branch factory serving the south of the Island.

CRANES AND ELECTRICAL CABLE

*Mr. S. K. Basu, of Messrs. J. C. Coondoo and Sons, 22, Raja Woodmunt-street, Calcutta 1, India, is interested in representing United Kingdom suppliers of electric overhead travelling and traversing cranes and underground electrical cable.

Mr. Basu is interested in cranes because of the potentialities opened up by the Ganga Bridge project at Mokama Ghat; his interest in electrical cables also relates to the same project where a quite substantial township is to be built and service cable will be required.

Exporters interested in this inquiry should write direct to Mr. S. K. Basu, of Messrs. J. C. Coondoo and Sons giving full details of their offers. Telephone inquiries to Chancery 4411, ext. 776 quoting Ref. ESB/7478/55.

UGANDA HOUSING EXHIBITION

Further information has been received regarding the Uganda Better Homes Exhibition (details of which were published in *The Builder* of April 1). It is understood that 14 houses of differing types will be on view. They will include a Sandcrete block four-room house and a stabilised murram block four-room house built by the African Housing Dept.; a three or four-room house of steel and concrete to be built by A. Baumann and Co. in conjunction with Concrete Construction, Ltd.; a three-room vermiculite house built by Overseas Prefabricated Structures; two houses by United Builders and Contractors; a site has been reserved for Webascon Buildings of Bristol.

Amongst those firms who have taken space in the prefabricated area are A. Baumann and Co., Ltd.; African Hbusing Dept. (low cost zone house); Community Development Dept.; and Arcon Construction, Ltd. The exhibition is being held from May 21 to 31 next.

EQUIPMENT FOR INDIA

The Modern Construction Co., Engineers' contractors, 7, Barakhamba-road, New Delhi, India, are interested in importing floor polishing machines, electrically operated, fitted with AC single phase, 220/230 volts, 50 cycle, electric motors. The machines should be fully mobile and have a grinding capacity of 600 to 1,000 sq. ft. in a shift of eight hours.

They are also interested in the purchase of mono-rails, electrically operated, with a length of 100 yds. and would appreciate receiving full particulars complete with prices and firm quotations and the earliest delivery, cif Bombay or Calcutta.

* From the Board of Trade Special Register Information Service.

The SCOTTISH BUILDER

Housing Glasgow's Overspill

THERE should be no further delay in starting the new town at Cumbernauld and in preparing measures to help dispersal of industry, states the Scottish section of the Town and Country Planning Association in a letter sent out recently from their Glasgow headquarters appealing for new members to support their campaign against congested development of cities.

The housing scheme idea in Glasgow, it is added, has been carried very far in the massed new tenements at Cranhill, Barlanark, and Drumchapel on the fringes of the city. Rush-hour traffic conditions at the city centre caused weariness and waste, and there was now talk of rebuilding the Gorbals in multi-storey tenements for young families as well as for others.

The association believed that there need not always be so extreme a concentration within Glasgow. Human well-being and industrial efficiency could both be served by building smaller independent communities, with work and housing in relation, such as in old towns like Dumfries and new towns like East Kilbride.

The association commended the recommendation of the Clyde Valley Planning Advisory Committee in favour of a third new town at Houston and the development of various existing communities in the near neighbourhood of Glasgow to receive shares of the city's necessary overspill. The latter recommendation, with its narrow geographical limits, seemed to show once more the urgent need for a national outlook and plan looking beyond the present populous industrial area and not bound by the limits of the region.

The present times are critical in planning matters in Scotland, states the association's annual report which accompanies the letter. Right or wrong action now would affect generations. It appeared strange that public interest was so little directed on vital questions such as provision for the 300,000 Glasgow people who could not be rehoused within the city boundary when strong general pressure might compel the contending authorities to agreement and action.

THE
HEATING of CHURCHES

A full Technical Review of the whole subject prepared by a committee of Architects and Heating Engineers appointed by the Central Council for the Care of Churches

Published for
The Central Council for the Care of Churches

by

THE BUILDER
The Builder House, Catherine Street, Aldwych, London, W.C.2
TEMple Bar 6251 (Ext. 5)

PRICE 2/6
by Post 2/9

SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from February 7, 1955. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 9½d.; Labourers, 3s. 4d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours.
		s. d.
1st	25	41 8½
2nd	33½	55 7½
3rd	50	83 5
4th	66½	111 2½
5th	75	125 1½

For female labour, the rates are:

	s. d.
Operatives on craft operations (at end of probationary period)	3 4
Operatives on labouring operations (at end of probationary period)	3 0½

Directive to Plumbers

BUILDING WORK in Fife is threatened with a hold-up because of a directive which has been issued by the Scottish Federation of Plumbers and Domestic Engineers (Employers) Association instructing members to return, uncompleted, all schedules asking for tenders on a firm-price basis as far as materials are concerned.

Mr. R. S. Lawrie, county architect, told Fife Housing Committee yesterday there was no doubt they were going to have difficulties. Since January the prices of plumbers' materials had increased considerably and there was no doubt that the plumbers had suffered loss by being tied to the firm-price contract. They wanted a variation of price clause inserted in future schedules.

After it had been pointed out that the county council had adopted firm-price contracts on Government instructions, it was agreed that the county convener's committee be asked to raise the matter with the Scottish Office with a view to having the condition rescinded.

Harris Hydro Scheme

A SCHEME prepared by the North of Scotland Hydro-Electric Board to supply 2,400,000 units of electricity annually to their distribution system in Harris has been confirmed by Mr. James Stuart, Secretary of State for Scotland.

Under the scheme the waters of Loch Chliostar will be harnessed. A dam will

be built across the River Eaval at the outlet of the loch, and water led by pipeline to a generating station, with a capacity of 700kw's, situated on the bank of the River Eaval, into which the turbine will discharge. The scheme is estimated to cost £270,000.

A White Paper on the scheme has been published, and is available from HMSO or from any bookseller (price 3d.).

Architects' Society

THE Stirling Society of Architects have appointed the following office-bearers:—President, Mr. W. H. Henry, county architect for Clackmannan; vice-president, Mr. Robert Wilson; chairman, Mr. Alexander Strang; vice-chairman, Mrs. E. H. Shipman: secretary, Mr. John M. Thomson.

Cranston's Tearoom

SUBJECT to the approval of Glasgow Corporation, the Finance Committee recently agreed to grant a seven-year lease of Cranston's Tearoom in Ingram-street to a firm of wholesale jewellers and warehousemen. There is a proviso that as far as is practicable the Rennie Mackintosh features of the building are to be preserved.

NEW BUILDINGS

Ayr.—Plans have been prepared by their architects for a garage, oil station and storage buildings, estimated cost £18,000, to be erected at North Harbour-st., for Esso Petroleum Co., Ltd., 36, Queen Anne's Gate, London.

Bo'ness.—Plans prepared for new West Lothian pithead baths and canteen to be erected at Kinnell Colliery (est. cost £138,000), have been approved. Architect, D. D. Jack, 24, Royal Circus, Edinburgh.

Dunbartonshire.—Plans prepared for Maxwell Donald, 32, Monymusk-pl., Glasgow, for garage buildings at Drumchapel, Unit No. 2 site. Approved designs are by Glasgow Housing Architects and Planning Department, Glasgow Cross, The Trongate, Glasgow, EC1.

Dunfermline.—Plans have been approved for a new cleansing depot, the estimated cost being £100,000. The building will consist of administration, garage, salvage, general stores and snow-cleaning block.

Glasgow.—Corporation is to acquire ground at Great Western-rd., Anniesland-Knightswood district, for the erection of new lighting control station, departmental garage, workshops, storage buildings, etc., for the Housing Department. Plans are to be prepared by Archibald G. Jury (F), Housing A, Architectural and Planning Department, Glasgow Cross, The Trongate, Glasgow, EC1.—Plans prepared for Bank of Scotland, Ltd., Edinburgh, for alterations and additions for bank at St. Vincent-st. Architect, F. Durward, FRIBA, Bank-bldgs., The Mound, Edinburgh.—Plans prepared and approved for Charles Silverstone, Ltd., for alterations and additions at London-rd., Salton. Architects, Charles J. Macnair, Elder & Ptnrs., F.ARIBA, 529, Sauchiehall-st., Charing Crss, Glasgow, WC3—Plans prepared for Glasgow Academical War Memorial Trust, Ltd., West George-st., for rebuilding, additions and alterations of Glasgow Academy, Colebrook-st., Hillhead, have been approved. Architects, John Keppie & Henderson & Joseph L. Gleave, MA, F.ARIBA, 21, Woodside-pl., Woodlands-rd., Charing Cross, Glasgow, WC3.—Plans prepared and approved for alterations and additions at Corporation's Ibrox Garage, Helen-st., Govan. Architectural Department, Transport-bldgs., Bath-st., Glasgow, WC2.—Corporation are negotiating for acquisition of land at Medwyn-st. for erection of hall, offices and storage accommodation for the lighting department. Plans to be prepared by Architectural and Planning Department, Municipal-bldgs., George-sq., Glasgow.

Glasgow.—Plans prepared and approved for alterations and additions at Cardonald Place-rd., Cardonald, for which the architect is Mr. John E. Edgar, 96, Camphill-ave., Langside, Glasgow, SC3.—Plans prepared by their own architects have been approved for additions at the Shields-rd. area, by James Howden & Co., Ltd., 195, Scotland-st., Glasgow, SC5.—Plans prepared for alterations and additions at 168/170, New City-rd., St. George's Cross. Architects are C. & J. Anderson, 39, Stevenson-st., Dennistoun, Glasgow, EC2.—Plans prepared for alterations and additions to kinema at Battlefield-rd., Langside, for which architects are Henerman, Jack & Robertson, F.ARIBA, 195, Bath-st., Blythswood, Glasgow, WC2.—Plans prepared for British Transport Commission for additions and alterations, etc., at St. Enoch Hotel. Architectural Department, St. Pancras-chbrs., Euston-rd., London, NW1.—Plans prepared for Catholic Archdiocese of Glasgow for new church building at Cumbernauld-rd. have been approved. Architect, Thomas S. Cordiner, ARIBA, Blythswood-chbrs., West George-st., Glasgow, WC2.—Plans have been prepared for Church of Scotland Trustees, 121, George-st., Edinburgh, for new church halls to be erected at Porchester-rd. Architects, Ross, Beak & Whitelaw, FF.RIBA, 2, Clifton-st., Charing Cross, Glasgow, WC3.

Lanarkshire.—Plans prepared for Catholic Archdiocese of Glasgow's new church halls, to be erected at Dovecot, Pollockshaws. Architect, Thomas S. Cordiner, ARIBA, Blythswood-chbrs., West Regent-st., Glasgow, WC2.

Lanarkshire.—Plans are in hand for 1st phase of development of Dunrobin-rd. housing site at Airdrie, consisting of 240 houses. Council A, Harry Shaw, FRIBA, Municipal offices, Royal Bank-bldgs., Graham-sq., Airdrie.

Paisley.—Plans have been approved for the construction of a new Trades School at Renfrew-rd., Laighpark, Paisley, by Renfrew CC. There will be three laboratories, three drawing office rooms, and eight classrooms as well as 13 workshops. The total cost of the project is estimated at £250,000.

Renfrewshire.—Plans have been approved for 54 houses to be erected at Kingston Hostel housing development of Neildston. Architect, J. Austen Bent, ARIBA, 15, Palmerston-pl., Westend, Edinburgh.

Rutherglen.—A RC primary school is to be erected at Blairbeth, Rutherglen. The school will have nine classrooms and an assembly hall. Cost is estimated at £58,764. Dean of Guild approval has been given.

Stirlingshire.—CC has approved new high schools at Balfron and Falkirk, and also primary Protestant school at Kilsyth. County A, Alexander J. Smith, ARIBA, County Architectural Offices, Old Infirmary Buildings, Spittall-st., Stirling.

Whitehills.—Approval has been given to Banffshire CC by Department of Education for Scotland for a new Protestant school. County A, William R. Wark, County-bldgs., Cullen.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

APRIL 22.

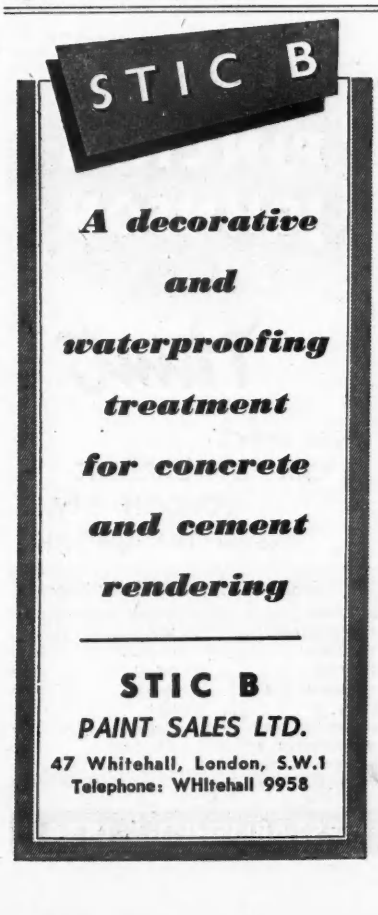
***†East Suffolk CC.**—Workshop block, Lowestoft College of Further Education. County A, Ipswich. Tenders by April 29.

***†Southampton CBC.** — Extensions, Deanery secondary school. Boro' A. Dep. £1. Tenders by May 16.

***†Wanstead and Woodford BC.**—Conversions of various properties. Tooley and Forester, architects, Midland Bank-chbrs., Buckhurst Hill.

APRIL 23.

***†Deal BC.**—42 houses, St. Martins-rd. site. BE. Dep. £2 2s. Tenders by May 23.


STIC B
A decorative and waterproofing treatment for concrete and cement rendering
STIC B
PAINT SALES LTD.
47 Whitehall, London, S.W.1
Telephone: WHitehall 9958

***†Oldbury BC.**—24 maisonettes, Stone-st. and Lodge-st., Bridgwater and Coulton, quantity surveyors, 17, George-rd., Edgbaston, Birmingham. Dep. £2 2s. Tenders by May 27.

APRIL 25.

***†Dunstable BC.**—Alterations, etc., municipal offices at Grove House and Priory House. BE. Dep. £2 2s. Tenders by May 18.

***Ealing BC.**—Dressing-rooms, Horsenden Hill playing fields. BE&S. Dep. £2.

***†Southampton CBC.**—64 dwellings. BE.

APRIL 26.

***Ilford BC.**—25 garages, Wanstead Park-rd. BE. Dep. £2 2s.

***†Northants CC.**—Erection of six ambulance and fire stations. County A, Northampton.

***Preston CBC.**—Dining-room and kitchen, Talbot primary school. BE&S. Dep. £2 2s.

APRIL 27.

***†Eastbourne CBC.**—86 houses, Ocklynge estate. BS, 2, Saffrons-rd. Dep. £2 2s. Tenders by May 25.

***†Wandsworth BC.**—195 dwellings, West Hill, Putney. R. H. Jerman, TC.

APRIL 29.

***†Crawley Dev. Corp.**—839 dwellings, Southgate, East. Chief A, Broadfield.

APRIL 30.

***Aberdare UDC.**—14 houses, Penywaun, and appurtenant works. E&S. Dep. £2 each.

Faringdon (Berks) RDC.—Ten houses at Faringdon and Shrivenham. E&S. Dep. £2 2s.

MAY 2.

***Ruislip and Northwood UDC.**—Caféteria, Ruislip Lido. E&S. Dep. £2 2s.

MAY 4.

***†Wandsworth BC.**—Ten flats, Hazelhurst-rd., Tooting. TC.

MAY 5.

***Altrincham BC.**—Convenience, junction Park-rd. and Moss-la., Timperley. BS. Dep. £2 2s.

MAY 7.

***Dagenham BC.**—110 dwellings, Marks Gate estate. BE&S. Dep. £2 2s.

***†West Sussex CC.**—New Thorney Island school. County A, Chichester.

MAY 9.

***Southborough UDC.**—29 houses and flats, Powder Mill-la. site. Howes & Jackman, architects, 1, Verulam-bldgs., Gray's Inn, London, WC1. Dep. £2 2s.

***Swale RDC.**—36 houses and 10 garages, Iwade. E&S, 48, Bell-rd., Sittingbourne. Dep. £3 3s.

MAY 12.

***Oldham CBC.**—49 houses and 36 flats, Holt's estate. Cameron and Middleton, chartered quantity surveyors, 21, Queen-st. Dep. £2 2s.

MAY 13.

***Essex River Board.**—Office, Fenn-rd., Halstead. E, Rivers House, Springfield-rd., Chelmsford. Dep. £2 2s.

MAY 14.

***Great Yarmouth CBC.**—Erection of girls' high school, Gorleston. F. Jackson (A), 22, Euston-rd. Dep. £2 2s.

MAY 24.

***Croydon CBC.**—Second instalment, Croydon Technical College, Fairfield site, Park-la. R. Atkinson & Ptnrs., 13, Manchester-sq., W1. Dep. £1.

MAY 30.

***Brighton CBC.**—Reconstruction of Upper Bevendean Farm. BE&S, 26-30, King's-rd. Dep. £2 2s.

JUNE 6.

***Cardiff City C.**—92 maisonettes, Hodges-row, Bute-st. City S. Dep. £2 2s.

NO DATE.

***Croydon CBC.**—96 garages, Kennelwood-cres., Calley Down-cres., Redstart-close and Headley-drive, New Addington estate. BE.

***Market Harborough UDC.**—Ten houses, Southern estate. L. Rowen (A), 39, High-st.

***Peterborough Jt. Ed. Bd.**—Extensions to County Grammar School for Girls, Lincoln-rd. Ruddle and Wilkinson (F&L), architects, Long Causeway-chbrs. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

APRIL 20.

***†Staffs EC.**—Approved list of contractors for heating work. County Ed. A, Green Hall, Lichfield-rd., Stafford.

***†Staffs EC.**—Approved list of contractors for electrical work. County Ed. A, Green Hall, Lichfield-rd., Stafford.

APRIL 25.

***Birmingham City C.**—Installation of heating, etc., Shenley Fields cottage homes. J. F. Gregg, TC. Dep. £2 2s.

APRIL 27.

***†Norfolk EC.**—Improvements, etc., to nine schools. Chief Ed. Officer, Stracey-rd., Norwich.

APRIL 30.

***West Riding CC.**—Renovation and painting three schools. Div. Ed. Officer, Alexandra-st., Goole.

MAY 4.

***Taunton BC.**—Entrance gates, piers and flank walls, Cemetery, Wellington-rd. BE&S.

MAY 9.

***Carlisle City C.**—Engineering services, Harraby secondary modern school. City S., 18, Fisher-st.

MAY 18.

***Deptford BC.**—Repairs and decorations to requisitioned properties. BE&S. Dep. £2 2s.

NO DATE.

Bedford BC.—Demolition works at redevelopment area No. 1. BE&S.

ROADS, SEWERAGE AND WATER WORKS

APRIL 30.

Brierley Hill UDC.—Orchard-st. and Bromley site levelling and preliminary drainage works. E&S. Dep. £3 3s.

Kent CC.—Trunk road improvement works. County S. Dep. £2 2s.

MAY 3.

Wigston UDC.—Enlargement of sewage disposal works, alterations and 1,200 yds. rising main. Pick, Everard, Keay and Gimson, engineers, 6, Millstone-la., Leicester. Dep. £5 5s.

MAY 6.

Rotherham CBC.—2¼m. gals. rc service reservoir at Boston Park. BE. Dep. £2 2s.

***Rugby BC.**—Paving, etc., Cattle Market. BS. Dep. £2 2s.

MAY 7.

Brighton CBC. — Contract No. 2, 150,000 gals. service reservoir at Woodingdean Waterworks. E. Dep. £5 5s.

Cowes UDC.—Reconstruction of Victoria-rd., Cowes. E&S. Dep. £2 2s.

Romsey and Stockbridge RDC.—About 3¾ miles of sewers, etc. Lemon and Blizard, engineers, Castle-la., Southampton. Dep. £3 3s.

MAY 9.

Gillingham BC.—Making-up of Wigmore-rd. BE. Dep. £2 2s.

Glossop BC.—Hurst reservoir scheme, contract No. 1. Construction of overflow weir, bywash, and diversion channel. Rofe & Raffety, engineers, 3, Victoria-st., SW1. Dep. £2 2s.

MAY 11.

Cricklade and Wootton Bassett RDC.—Tarspraying of about 11,000 sq. yds. carriageways at Wootton Bassett estate. E&S.

Peterboro' City C.—7,200 lin. yds. in salt-glazed ware and concrete pipes; 130 lin. yds. of 7-in. castrion rising main and reinforced concrete substructure for small pumping station. J. D. and D. M. Watson, MM.ICE, 18, Queen Anne's Gate, SW1. Dep. £5 5s.

NO DATE.

Wednesbury BC.—Friar Park housing site; site development works. BE. Dep. £3 3s.

Wednesbury BC.—Beech-rd./Simcox-rd. housing site; site development works. BE. Dep. £3 3s.

GENERAL BUILDING WORK

(LONDON)

Brentwood.—CIVIC OFFICES.—The erection of new civic offices in Ingrave-rd. has been proposed by UDC. The estimated cost of the scheme would be about £123,000.

Esher.—WELFARE CLINIC.—CC propose to erect a welfare clinic at The Forum, Walton-rd., West Molesey.

Gravesend.—HOSPITAL IMPROVEMENTS.—The improvement of the administration accommodation at Gravesend and North Kent Hospital has been proposed by the South-East Metropolitan Regional Hospital Board.

Greenwich. — APPOINTMENT. — The South-East Metropolitan Regional Hospital Board have appointed H. Reginald Ross, 40, Great Ormond-st., WC1, as architect, and Cyril E. Kenney & Ptnrs., 36, Gloucester-pl., W1, as quantity surveyors, for the remodelling of the kitchen at St. Alfrege's Hospital.

Kingston-upon-Thames.—HOSPITAL DEVELOPMENT. —Development plans for the increase in accommodation at Kingston Hospital to provide ultimately 700 to 800 beds are recommended for the approval of the South-West Metropolitan Regional Hospital Board. The first stage will be a four-storey out-patient block, estimated cost £592,000.

Richmond.—HOSPITAL EXTENSIONS.—A development plan for an increase in the number of beds at Richmond Hospital from 121 to 200, at an estimated cost of £361,000, has been recommended for the approval of the South-West Metropolitan Regional Hospital Board.

Tottenham.—SITE ACQUISITION.—Proposals have been made by TC for the compulsory acquisition of houses in Netherton, Tewkesbury, Eckinton, Harefield and Fladbury-rds., comprising about 3 acres. Together with land already owned by TC, it is proposed to redevelop for housing purposes. G. Simpson, Chief TP and Building Surveying Assistant, has stated that the proposed accommodation would comprise 48 two-bedroom flats, 16 single-bedroom flats and 56 three-bedroom flats. A smaller site would be allocated for the London City Mission in Fladbury-rd., and provision would be made for an open space and children's play area. This would be made possible by building a high block of flats.

HEAD OFFICE;
4 CARLTON GARDENS,
LONDON, S.W.1.
Telephone: TRAfalgar 5600

Principal Branches and Stock Depots:

BELFAST	*Belfast*	*58643*
BIRMINGHAM, 1 ...	*Midland*	*1042-3-4*
BRIGHTON, 1	*Brighton*	*23739*
BRISTOL, 8	*Bristol*	*33889*
GLASGOW, C.2 ...	*Douglas*	*3281-2*
LEEDS, 11	*Leeds*	*24377*
LIVERPOOL, 20 ...	*Liverpool, Bootle*	*2121*
MANCHESTER, 3 ...	*Blackfriars*	*3800*
NEWCASTLE-ON-TYNE, 1	*Newcastle-on-Tyne*	*21919*
SOUTHAMPTON ...	*Southampton*	*23648*

ESTABLISHED 1834

(PROVINCIAL)

Astley (Lancs).—Holy Family Church, Boothstown (Rev. Father T. Byrne), propose new RC sec. sch. at Manchester-rd.

Berwick.—Robert Pringle & Sons, Hawick, to construct factory on Tweedside trading estate.

Birmingham.—Dunlop Rubber Co., Ltd., Ford Erdington, propose erection of large factory of 600,000 sq. ft. Plans by Staff A, S. Bentley.

Blackburn.—Scapa Dryers, Ltd., Witton, propose erection of large extensions to their factory, both on town and Cherry Tree sides of existing plant at Preston Old-rd.

Brierley Hill.—Samuel Taylor & Sons, Ltd., propose erection of two engineering shops and offices at Bull-st. (inquiry held).

Carlisle.—City C to place contract for engineering services for proposed Harraby Sec. Mod. Sch. City E, L. J. A. Stow, 18, Fisher-st.

Chadderton.—UDC received allocation of 80 dwellings for 1955 programme.

Chester.—EC propose following for 1956/7 schools programme:—Primary on Plas Newtown estate; C of E Sec. Mod. for Girls at Eaton Park estate; extension to City High School.

Chorley.—RDC approved plans for erection of canteen and first-aid centre at Chisnall Hall Colliery, Coppull, for National Coal Board.

Coventry.—A. D. Foulkes & Co., Ltd., propose conversion of old Rover showrooms at Warwick-row to form modern departmental store. Architects, Hellberg and Harris, Coventry. Work to commence within next eight weeks.

Darlington.—TC to let contract for erection of 54 houses on Branksome housing estate, Darlington. Boro' A, E. A. Tornbohm.

Darlington.—Greenbank Maternity Hosp. to be modernised and improved by Newcastle-on-Tyne Reg. Hosp. Board. A, P. H. Knighton, "Dunira," Osborne-rd., Newcastle.

Derby.—Strettons Derby Brewery Co., Ltd., propose erection of licensed premises at Henley Green, Mackworth. Architect, W. Blair, 9, St. James-st., Derby. Contracts not yet placed.

Eccles.—Lancs CC propose erection of sec. mod. sch. at Wentworth-rd.

Eccles.—BC approved plans: extensions to premises at 113/117, Liverpool-rd. for Motlers Stores, Ltd. Architects, Massey and Greaves, 186, Oxford-rd., Manchester.

Fylde.—RDC propose erection of 18 houses at Long End's Field, Bush-la., Freckleton.

Halesowen.—TC approved pavilion at Grove Recreation Ground for Halesowen Football Club.

Harrogate.—TC approved plans for erection of 23 houses at Almsford-pl., Almsford-rd. and Almsford-walk for Delahope, Ltd., Fawcett-st., York.

Hebburn-on-Tyne.—UDC approved proposal by J. Rowell & Co., Gateshead, to build hotel in Mill-la.

Lanchester (Co. Durham).—RDC allocated site at Hamsteels for new club. Council to suggest to promoters that premises include community hall in addition to licensed premises.

Leeds.—Senate Leeds University propose new buildings for technological departments. Architects, Lanchester and Lodge, 10, Woburn-sq., London, WC1, —Joshua Tetley & Sons, Ltd., Hunslet-rd., Leeds, 10, propose modernisation of Griffin Hotel, Boar-lane.

Manchester.—TC approved erection of almshouses at Every-st. for Charities Mayes, Hartley and Sutton. Architects, Harry S. Fairhurst & Son, 55, Brown-st., Manchester.—Wheeler, Wood and Hobson, 26, King-st., prepared plans for erection of single-storey warehouse and garage at 115, Rusholme-rd., Chorlton-cum-Hardy, for J. P. Hepworth.—B. Waterhouse, 134, Deansgate, architect for rebuilding of fourth and fifth floors to retail store at 16/20, St. Annes-sq., for Marshall and Snelgrove, Ltd.

Matlock.—UDC approved plans for new sec. sch. at Darley Dale for Derbys. EC; retail shop and stockrooms at Lynholmes-rd. for Derwent Valley Co-op. Society, Ltd.

Meriden.—Min. allowed appeal by J. G. Gray for erection of 20 houses at Bennetts-rd., Keresley.

Newcastle-on-Tyne.—Plans being prepared by A. S. Waring, 36, Jesmond-rd., Newcastle, for converting premises in Archibald-ter. into four flats for Wesley H. Oliver, Ltd., builders, Newcastle; and for paint shop, 8 lock-up garages, mess room, etc., in Pontelland-rd. for Kenton Motor Co., Ltd.—Marshall and Tweedy, 36, Blackett-st., Newcastle, prepared plans for 8 houses in Stanway-drive for A. Potts, builder, 289, Heaton-rd., Newcastle.—C. A. Parsons & Co., Ltd., to construct new machine shops on south side of Shields-rd.—EC to let contract for erection of prefabricated timber classrooms at Montague and Edgefield Prim. Schs. City A, G. Kenyon, 18, Cloth Market.—Northumberland Aged Mineworkers' Homes Assoc. plan erection of further miners' cottages. Association's A, W. Dixon & Son, 1, Collingwood-st.

Newcastle-upon-Tyne.—Cackett, Burns Dick and McKellar, 21, Ellison-pl., had plans approved for building of six-storey extension for offices and showrooms to Cross House, Westgate-rd.—Plans by C. S. Errington, 46, Grainger-st., for medical centre, office and dockers' call stand on Quayside, Newcastle, approved.—H. L. Honeyman, Eldon-sq., architect for new vicarage in Park-rd.—Plans for layout of 15 houses in Grasmere-ave. approved. Plans by City

A. Plans for three-storey flats and maisonettes at Byker also approved.

Northants.—EC to include following in 1956/7 programme:—Towcester Cty. Mod. (completion). First instalment of Thrapston Cty. Sec. Mod. at Wollaston; completion of Kettering Gram. Sch.; Desborough Sec. Mod.; prim. schs. at Corby, Wellingborough, Barton Seagrave and RC prim. at Kettering.

Northumberland.—EC to appoint private architects for proposed Morpeth Sec. Sch. (£134,000); Alnwick Sec. Sch. (£88,000); and Tweedmouth Sec. Sch. (£93,000).

Nottingham.—Mitchells and Butlers, Ltd., Birmingham, propose erection of new PH at Bracebridge-dr. Architect, Cecil Howitt & Ptnrs., St. Andrew's House, Mansfield-rd.

Nuneaton.—TC approved layout for erection of 61 dwellings on Meadow-st./Bottrill-st. clearance area.

Oldham.—EC propose following in 1956/7 programme:—Breeze Hill Cty. Sec. Sch. and Holt's C of E Inf. Sch.

Peterlee New Town.—British Legion approved a proposal to build club, est. cost £40,000.

Redcar.—Davis, Belfield and Everest, 9, Ashley-pl., London, SW1, have been appointed QS by North Riding EC for proposed Redcar West Mod. Sch. Architect, D. C. Hall, 6, Masons-yard, Duke-st., SW1.

Runcorn.—RDC to sell site at Preston Brook for erection of village hall by Village Hall Com.

Seisdon.—Birmingham Reg. Hosp. Board propose erection of hospital, £2m. est. Work to commence next year.

Sheffield.—TC propose new home for aged at Greenhill Bradway estate.

Stockport.—BC propose purchase and adaptation of "Woodend," Altrincham, to form aged persons' home, £20,500 est.

Stockton-on-Tees.—RDC received loan sanction for £29,715 for erection of 24 houses at Preston. Surveyor, G. W. T. Brown.

Stokesley.—Davis, Belfield and Everest, 9, Ashley-pl., London, SW1, been appointed QS by North Riding EC for proposed Stokesley Cty. Mod. Sch. Architects, Gollin, Melvin Ward & Ptnrs., 15, Manchester-sq., London, W1.

Stoveley.—National Coal Board propose 184 houses at Poolsbrook. UDC propose 5 shops at Inkersall estate.

Stretford.—BC approved plans: 3-bay extension to warehouse at Mosley-rd. for Massey-Harris-Ferguson, Ltd.; extension to radio laboratory at Westinghouse-rd. for Metropolitan-Vickers Electrical Co., Ltd.; offices and workshop at Westinghouse-rd. for Metrovick, Ltd.; petrol and service station at Westinghouse-rd. and Mosley-rd. for Vacuum Oil Co., Ltd.

Sunderland.—Work will begin shortly on new RC church of St. Cecelia in Ryhope-rd., Sunderland (accommodation for 300 people). Contracts are undecided. Architects, S. W. Milburn & Ptnrs., 9, Esplanade.

Swinton and Pendlebury.—TC approved in principle erection of new library.

Tutbury.—RDC propose erection of 62 houses at Church-rd. estate, Stretton.

Tyldesley.—J. Green (Astley), Ltd., propose 100 houses at Chaddock-la., Boothstown.

Wallsend.—Detailed plans and quantities submitted to MH&LG for proposed East End branch library. Architects, J. Walter Hanson & Son, 123, Northumberland-st., Newcastle-on-Tyne.

Wallsend—TC received sanction for building 32 houses, cost £43,670, and 8 flats, cost £8,278. Start to be made with building of three-storey flats, cost £57,442. BS, G. Teasdale.—TC to negotiate with J. Armstrong, Willington West Farm estate, for building of 11 houses on estate. Plans by BS, G. Teasdale. —TC given approval to acquisition of site by George Angus & Co., Ltd., Walker-on-Tyne, for new factory. Company's A, S. Milburn & Ptnrs., The Esplanade, Sunderland.

Wigan.—MoW propose erection of security prison on site between Leyland Park, Hindley, and Bickershaw-la., Abram.

Wigton.—RDC propose erection of 60 houses:—29 at Western Bank, Wigton, 19 at The Crofts, Silloth, and 4 each at Newton Arlosh, Blencoge and Bowness-on-Solway.

Wolverhampton.—BC propose erection of fire station at Bushbury-rd., £52,000 est. EC propose following in 1956/7 schools programme:—Bee-la. Cty. Sec., £232,500 est.; St. Anthony's RC Prim. Jun. and Inf., £44,000 est.; completion of jun. and inf. department at Underhill Cty. Inf. Sch., £36,000 est.; Fordhouse/Oxley Community Centre, £43,000 est.; and Kingswood Spec. Sch., £38,000 est.

TENDERS

* Denotes *accepted*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Barnsley.—Sec. mod. sch. for CBC. Architects, Messrs. E. D. Lyons, L. Israel and T. B. H. Ellis, 26, Seymour-st., W1. Quantities, Messrs. Mercer & Miller, 30, Gloucester-place, W1: *James Miller & Ptnrs., Four Mile Works, Newmillerdam, Wakefield, £208,000.

Billingham-on-Tees.—Church of England church in Tintern-ave. Architect, G. E. Charlewood, 14, Neville-st., Newcastle-on-Tyne: *R. E. Coleman, Ltd., Western Hill, Durham.

Blyth.—Pithead baths at Horton Grange Colliery. Plans by the NCB Architect's Dept., Ashfield Towers, Gosforth: *John Jackson & Sons, Corporation-st., Newcastle-on-Tyne.

Chester.—22 houses and 4 flats, Christleton, for RDC: *Thos. Warrington & Sons, Ltd., 82, Station-rd., Ellesmere Port, Wirral, £30,898.

Chorley (Lancs).—73 houses and flats in "Townson" construction at Chorley: *Wm. Townson & Sons, Ltd., Higher-Swan-la., Bolton.

Daventry.—Eight bungalows at Weedon for RDC: *Haynes & Sons (Daventry), Ltd., £8,772.

Doncaster.—Phases 1 and 2 Technical College for Further Education, for CBC. Architect, L. J. Tucker, ARIBA, FIHsg, Boro' A, Doncaster. Quantities by: As above: *Doncaster Corporation Works Department, £195,969.

Halifax.—Quarry House School, Northowram, for EC: *E. & T. Bower, Ltd., Rookery-la., Salterhebble, Halifax.

Kidderminster.—Church hall at Meredith Green, Birchen Coppice estate: *Lacy Bros., Ltd., Adam-st., Kidderminster.

Lancs.—Following schools for EC:—RC secondary at Longridge-rd., Preston: *John Turner & Sons, Ltd., William Henry-st., Preston. Worsley Grammar Technical: *J. Jarvis & Sons, Ltd., 16, Kennedy-st., **Manchester.**

LCC.—Contracts recently placed by the Council:—Renewal and improvement of electrical installation at Robert Montefiore Primary School, Stepney: *Thorpe & Thorpe, Ltd. (£2,771). Provision and fixing of hairpin railings at Lansbury Estate, Poplar: *Bayliss, Jones & Bayliss, Ltd. (£3,287). Repairs to main staircase, partitions, etc., at the Iveagh Bequest, Kenwood: *Holland & Hannen and Cubitts, Ltd. (£5,060). Provision of additional dormitory accommodation at Woolverstone House and conversion of the Orangery and Grotto at Woolverstone Hall, nr. Ipswich, Suffolk: *Rogers Bros., Ltd. (£14,000). Erection of pavilions at Abbotshall and Rochester Way playing fields: *J. A. Proctor, Ltd. (£7,009). Construction of Wandsworth Technical College extension: *Thomas & Edge, Ltd. (£53,820). Provision of additional classrooms and ancillary accommodation at Richard Atkins Primary School, Wandsworth, and Regent's Park Secondary School, St. Marylebone: *James Shackell & Co., Ltd. (£9,183). Repairs, internal decorations and improvements at Hammersmith Day College, Hammersmith South: *Charles Berger & Son, Ltd. (£9,892). Erection of changing unit, storage unit and groundsman's house at Goresbrook playing fields, Becontree: *H. C. Horswill, Ltd. (£25,473). Construction of one block of maisonettes and other work on Wilberforce estate (Hibbert-st. site), Battersea: *William Blood, Ltd. (£19,475). Erection of county secondary school at Kingswood-dr., Camberwell: *Lavender McMillan (Contractors), Ltd. (£455,400).

Leeds.—Dwellings for TC:—48 flats at Roman-ave., Roundhay: *Geo. Wimpey & Co., Ltd., London, £83,528. 60 Cornish unit houses at Beechwood and Swarcliffe estates: *Selleck Nicholls & Co., Ltd., St. Austell, Cornwall.

¶London (Admiralty).—Particulars of contracts over £1,000 in value:—
Hants: Painting works, *Baxter Bros. (1920), Ltd., Collingwood-bldgs., Newcastle-on-Tyne; steelwork erection, *Walker Bros., Ltd., Victoria Ironworks, Pleck-rd., Walsall; building works, *Walker Bros., Ltd., Victoria Ironworks, Pleck-rd., Walsall.
Cornwall: Building works, *T. E. Davey & Son, 20, Fernleigh-rd., Wadebridge, Cornwall; building works, *E. Thomas & Co., Ltd., Falmouth.

¶London (Air Ministry).—Contracts to the value of £500 or over for the week ended April 2:—

Building work: *G. Shipman & Son, Ltd., Newlands-drive, Riddings, Derby; *Hunt Bros. (Lancashire), Ltd., Garstane-rd., Wesham, Kirkham, Lancs.; *F. Rendell & Sons, Ltd., 11-12, St. John-st., Devizes, Wilts; *Bosworth & Wakeford, Ltd., Newst., Daventry, Northants; *A. J. Dunning & Sons (Weyhill), Ltd., Weyhill, Hants; *James Dennis & Son, Ltd., Knowle Braunton, North Devon; *Haymills (Contractors), Hanger-green, Western-ave., W5; *F. R. Hipperson & Son, Ltd., Wantz-rd., Dagenham, Essex; *Walter G. Birch (Harrogate), Ltd., Montpellier House, Harrogate, Yorks; *Thos. Lowe & Sons, Ltd., Broadway-chbrs., Hammersmith, W6.
Heating services: *Mr. F. Church, Canterbury Works, Glanville-rd., Oxford. *Artificers' work*: *Mr. Charles R. Price, Barnsley-rd., Doncaster; *Sandy & Co., 2, North Walls, Stafford.

¶London (MoW.).—Contracts placed by Ministry of Works for week ending March 26:—
Bedfordshire: MoW Stores, Wilstead, re-roofing large hangar No. 4 and robin hangar No. 2, *The Cambridge Erection Co., 96, Cavendish-rd., Cambridge. *Buckinghamshire*: DWS, Hanslope Park, Hanslope, contruction of canteen, *Betts & Faulkner, Ltd., 31, High-st., Stony Stratford, Bucks. *Cheshire*: NAB, Wirral Chambers, Market-st., Birkenhead, alterations, *Cartwright Bros. (Little Sutton), Ltd., Little Sutton, Wirral, Cheshire. *Cumberland*: Proof and experimental establishment, Eskmeals, erection of general store and boiler house, *John Laing & Son, Ltd., Dalston-rd., Carlisle. *Devonshire*: Shaldon, Devon, erection of automatic telephone exchange, *Stephens & Son, Okehampton-st., Exeter. *Glamorganshire*: UAX, Sybil-st., Clydach, alterations and additions, *Griff Davies & Co., Ltd., Paxton-yard, Swansea. *Hampshire*: NGTE, Pyestock, erection of various buildings, *Gilbert-Ash, Ltd., 2, Stanhope-gate, London, W1. *Middlesex*: Heath-rd., Twickenham, erection of a crown building, *E. Gostling (Builders), Ltd., 81-85, Whitten-rd., Twickenham. *Nottinghamshire*: HPO, Queen-st., alterations to accounts branch, *John Cawley, Ltd., Canal-st., Nottingham. *Wiltshire*: MRD, Porton, contruction of toxic laboratory and store building, *W. E. Chivers & Sons, Ltd., Devizes, Wilts. *Yorkshire*: Branch post office, 7, Mandale-rd., Thornaby, adaptations, *Robert Hudson & Sons (Contrs.), Ltd., St. Mark's-cres., Sunderland.

¶London (War Dept.).—Works contracts placed by War Department for week ended April 2:—
Berkshire: Miscellaneous, Y. J. Lovvell & Son, Ltd., Gerrards Cross. *Buckinghamshire:* Miscellaneous, W. M. M. Trickey, Beaconsfield. *Essex:* Miscellaneous, Warriner (Builders), Ltd., Romford. *Hampshire:* Miscellaneous, A. J. Dunning & Sons (Weyhill), Ltd., Weyhill; Gray Conoley & Co., Ltd., London. *Hampshire:* Painting and decorating, F. Labbett & Sons, Nottingham; building work, E. J. Logan (Putney), Ltd., London; miscellaneous, R. C. Radford, Farnham.
Kent: Painting and decorating, W. T. Pickering & Sons, Ltd., Watford; building work, Sidney Vallintine, Dover. *London:* Roadwork, Constable Hart & Co., Ltd., Richmond. *Oxfordshire:* Painting and decorating, F. Labbett & Sons, Nottingham; miscellaneous, J. G. Pimm & Sons, Eynsham. *Shropshire:* Roadwork, Constable Hart & Co., Ltd., Derby. *Staffordshire:* Building work, John Bowen & Sons, Ltd., Birmingham.

Longbenton (Northumberland).—Work has commenced on the erection of new research laboratories, pilot plant, offices, staff canteen and other amenities for Thomas Hedley & Co., Ltd., soap and detergent manufacturers, etc., Gosforth, Newcastle. Plans by the firm's own architects' dept.: *John Laing & Sons, Dalston-rd., Carlisle, £300,000.

Manchester.—Additional storey to existing offices at Ardwick Works, Vaughan-st., West Gorton, for Vaughan Crane Co., Ltd.: *T. W. Burley, 56, Upper Jackson-st., Hulme, Manchester.

Middlesbrough.—Erection of proposed Ladgate County Primary School for the EC. Education Architect, K. J. Caton: *A. Robinson (Contractors), Ltd., Linthorpe-rd., Middlesbrough, £88,119.

North Shields.—Church and hall at Lynn-rd. for St. Peter's Church Council. Architect, G. E. Charlewood, 14, Neville-st., Newcastle-on-Tyne: *S. Hann, Fairfield-drive, Cullercoats.

Nuneaton.—15 flats at Henry-st. for TC: *Gotheridge & Sanders, Ltd., £17,511.

Romford.—Erection of Romford Rise Park Cty. Jun. Sch., for Essex CC: *Barvis Partners, Ltd., £50,492.

Rugby.—Six shops at Bilton-rd. and Buchanan-rd. for TC: *Foster & Dicksee, Ltd., Rugby.

Runcorn.—Six houses at Crowley Antrobus for RDC: *Building Contractors (Warrington), Ltd., Pool-la., Warrington, £9,494.

Sheffield.—Houses for TC:—14 terrace type at Greenhill/Bradway estate: *W. Memmory & Sons, Ltd., Sheffield. £17,367. 84 maisonettes in 4-storey blocks at Gleadless (Area No. 1): *Reeves Charlesworth, Ltd., £119,196. 48 maisonettes in 4-storey blocks at Greenhill/Bradway estate: *Redmile & Poole, Ltd., £60,691.

Silloth.—Factory additions for Carr & Co., Ltd., millers, etc.: *John Laing & Sons, Dalston-rd., Carlisle.

Southampton.—School, Thornhill, for CBC. Architect, L. Berger, Esq., Dip.Arch, ARIBA, Boro' A. Quantities by Boro' Architect's dept.:—

H. J. Walker & Sons, Ltd., Bristol	£109,850
Rice & Son, Ltd., Southampton	108,039
M. J. Gleeson (Contractors), Ltd., Surrey	104,542

MODERN CONSTRUCTION
REQUIRES
THERMAL INSULATION
(HEAT WITHOUT COST)
Beachcroft Partitions
STAND THE TEST OF TIME
CELLULAR BLOCKS
—YOUR ANSWER
Harrow Road, Leytonstone, E.11
TELEPHONE:
MARYLAND 4747 (2 LINES)

A. J. Dunning & Sons (Weyhill), Ltd., Weyhill	103,288
Thomas & Edge, Ltd., London	103,225

FEDERATION OF MASTER BUILDERS

UNITE FOR STRENGTH

FEDERATION OF MASTER BUILDERS

THE LARGEST INDIVIDUALLY REPRESENTATIVE ORGANISATION IN THE KINGDOM

ENROL NOW

SUBSCRIPTION £5.5.0 p.a.

London Region — 37 Areas
And over 100 Provincial Branches

Phone or write:
SECRETARY,
26, GT. ORMOND ST., HOLBORN, W.C.1
Tel.: CHAncery 7583 (4 lines)
Telegrams: "EFFEMBE, Holb., London"

The Address of your Branch Secretary will be forwarded

Wm. T. Nicholls (Southern), Ltd., Southampton	101,689
C.P.C. (Southampton), Ltd., Southampton	98,980
Gee, Walker & Slater, Ltd., London	98,492
*Brighton Contractors, Ltd., Brighton	92,150

Southwark.—Erection of printing works and office accommodation, comprising basement, ground floor and four upper rooms, on a site at the corner of Bankside and Hopton-st., for Whitehead Morris, Ltd. It is expected that the contract will be completed by July, 1956. Architects, Alleyn & Mansel, FF.RIBA, Staple Inn-bldgs., WC1. QS, Andrew Roberts & Ptnrs., 17, Cromwell-pl., SW7: *G. E. Wallis & Sons, Ltd., 231, Strand, WC2, £135,000.

Stockton-on-Tees.—32 single persons' houses in Londonderry-rd. for the TC. Borough Architect, T. C. Hartley: *Robert Bainbridge, Prudential-bldgs., High-st., Stockton, £29,356.

Stretford.—Eight flats at Stretford-rd., Urmston, for BC: *Mr. D. Franklyn, Midland Bank-chbrs., Urmston, £10,511.

Sunderland.—Rebuilding fire-damaged premises at Crown Works, Pallion, for Steel and Co., Ltd., engineers: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Tipton.—36 flats at Dudley Port, 70 dwellings at Princes End for BC: *Direct labour, £53,740 and £94,458.

Wallsend.—48 three-storey flats at Low Willington Farm: *J. A. James, Archer-st., Willington Quay, £57,442.

Ware.—12 flats, Trinity-rd., for UDC: *G. Mott & Son, Watton at Stone, nr. Hertford.

West Bromwich.—New offices, storage buildings and workshops at Lyttleton Hall estate for Mills Scaffolding Co., Ltd.: *A. J. Crump & Sons, Ltd., Aston-rd., Dudley.

York.—100 houses, Chapel Fields estate, for City C: *Sorrells (York), Ltd., Main-st., Heworth, £125,497.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

A. H. Porter (Shoreham), Ltd. (546162.) Regd. March 19, 1955, 43, High-st., Shoreham-by-Sea, Sussex. Bldrs., etc. Nom. cap.: £500. Dir.: A. H. Porter.

Fairs and Green, Ltd. (546179.) Regd. March 19, 1955. 46, Quarry-rd., Tunbridge Wells. Plumbers, sanitary, gas, electrical and hot water engrs. Nom. cap.: £5,000. Dir.: C. F. Fairs.

R. J. Stagg, Ltd. (546213.) Regd. March 19, 1955. 28, Duncombe-rd., Godalming, Surrey. Bldrs., bldg. contractors, etc. Nom. cap.: £1,000. Dir.: C. E. Guest.

A. Searle & Sons, Ltd. (546220.) Regd. March 21, 1955. 105-6, London Fruit Exchange, E1. bldrs. and contractors, etc. Nom. cap.: £1,000. Dirs. to be appointed by subs. Sub.: Jean Herbert (c. dir.).

Suez Contractors (Maintenance), Ltd. (546243.) Regd. March 21, 1955. To act under contract with HM Principal Secretary of State for War Dept. as a civil engineering contractor in the Suez Canal Zone, etc. Nom. cap.: £100. Dirs. to be appointed by subs. Subs: George Wimpey & Co., Ltd., 27, Hammersmith-grove, W6; Holloway Bros. (London), Ltd., 157, Millbank, SW7; John Laing & Son, Ltd., Mill Hill, NW7.

R. Condliffe, Ltd. (546251.) Regd. March 21, 1955. Brick and Pipe Works, Middlewich-rd., Holmes Chapel, Ches. Mnfrs. of and dlrs. in bricks, slates, tiles, pipes, pottery, etc. Nom. cap.: £5,000. Dir.: G. R. Condliffe.

Bodaden Sand and Gravel Co., Ltd. (546252.) Regd. March 21, 1955. Bod Cipris, Bontnewydd, Caerns. Sand and gravel dlrs. and bldg. contractors. Nom. cap.: £3,000. Permt. dir.: R. I. Roberts.

BROAD-ACHESON
STRUCTURAL BLOCKS
prompt delivery
from bigger production
BROAD & CO. LTD., PADDINGTON, W.2

STEEL-CRETE
(SUPER METALLIC HARDENER)
SUPER-HARD DUSTLESS SURFACES
HAVE BANISHED ALL TROUBLES WITH OLD OR NEW
FLOORS
Inspect one that has withstood
HEAVY TRUCKING FOR 40 YEARS
and consult
STEEL-CRETE LTD.
Savoy House, 115/116, Strand, London, W.C.2
Tel.: Temple Bar 5621

THE ESSEX STEEL SCAFFOLDING Co LTD
SALES, HIRE
ERECTION
CRADLES
9A HIGH BEECH ROAD
LOUGHTON ESSEX
TEL: LOUGHTON 5022

WOOD BLOCK FLOORS
STEVENS & ADAMS LTD.
Victoria Works,
Point Pleasant, Wandsworth, S.W.18

W & M NEGUS LTD
Building Contractors
Station Works, King James St., Southwark, SE1
Telephone:— Waterloo 5474 (3 lines)

GALBRAITH
BROTHERS LIMITED
BUILDERS
CONTRACTORS
& ENGINEERS
Registered Office:
61 BARTHOLOMEW CLOSE
E.C.1
MONarch 7597-8
Works:
CRAYFORD BRIDGE
KENT
Bexleyheath 5651-4